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On the Practical Value of the Analyses of Soils.

BY S. W. JOHNSON.

The continued recommendation of soil-analyses, as a guide to the farmer, makes it proper to discuss at length their practical value. As a means of developing the natural laws of growth and cultivation, chemical analysis must continue to be, as it has been, of the very highest importance. A few years ago, in the infancy of agricultural science, it was found in many cases, that analysis indicated correctly what improvements were needed by soils; and the adoption of the general principle —*that plants require for their rapid development, that the composition of their ash should be reflected in the soil; i. e., that those inorganic ingredients which are found in a plant in large proportion must be present in the soluble part of the soil in large proportion, in order to produce that plant*—led necessarily to the idea, that, by comparing ash and soil analyses, an easy adjustment of the soil to the wants of the plant might be made.

The accumulation of knowledge on these topics has, however, clearly shown, that although it is often true that the analysis of a soil economically indicates the amendments that are needful to make it productive, it is frequently the case, that an analysis fails altogether to furnish useful indications; and if its results are valuable, it is often the case that they cost more than they are worth, or at least, knowledge equally good, perhaps better, might have been far more cheaply and certainly obtained.

The opinions of learned men on the value of soil-analyses for *practical purposes*, are very various. BOUSSINGAULT long ago declared them "more curious than useful." STOCKHARDT, in his 2d series of Chemical Field Lectures, Leipzig, 1853, has written as follows: "To estimate the productive quality of a soil by chemical analysis is at this time impossible, and will indeed remain impossible." Prof. WOLFF, of Hohenheim, Wurtemburg, in his recent classical treatise on scientific agriculture, writes of the scientific importance of making a certain class of soil-investigations—which have not yet been undertaken; but of the practical use of analysing this or that soil in particular, to assist in improving it, he says not a word that I have been able to find, in the whole work of 1200 pages. He is, however, of the opinion that, "in general, Practice has gone ahead of Science, in its ability to judge of the fertility of a soil;" and he therefore wisely recommends that "science connect her labors with the experience of the farm, endeavor to solve the problem that practice furnishes, and thus do the agriculturist direct service, in explaining the phenomena with which he is already acquainted." Prof. J. F. W. JOHNSTON, in the older editions of his lectures on Ag. Chemistry, attached a medium value to soil-analyses. The confidence of Prof. NORTON in their use was quite firm in the early part of his career, but in his later public addresses, and more decidedly in private conversation, he expressed his faith in qualified terms. Prof NASH of Amherst, has advanced the opinion, that were analyses of soils made at state cost, they would be very useful; but otherwise considers them too expensive for common use. Mr. MAPES of the Working Farmer, has industriously advocated soil analyses, as a practical guide to the farmer, and has published many in his paper.

In this disagreement of the doctors, let facts decide.

It would be proper to remark here somewhat on the methods in which analyses are carried out, for in scarce any matter is humbug more rife than in this, but the matter will be but briefly noticed for the present. When speaking of analyses in the course of this paper, only such are meant, as are carried out conscientiously, skilfully, and with a full knowledge of the subject; which are, in fact, just all they pretend to be; and which, further, define precisely, what they pretend to be. No account is taken of $5 analyses. A reliable analysis cannot by any means be made for so little money, *and support the analyst.* The two great societies of Great Britain, indeed, make analyses for their members at 1 guinea, if I remember right; but distinctly state that this is a nominal price, scarcely more than paying for the substances used, without reckoning the operator's time. It is possible that certain analysts may have discovered improved processes, by which their labor and expense is abridged; but such processes have not been submitted to the judgment of the scientific world, and cannot pass current there.

Admitting that a good analysis can be procured,

have we evidence that it can be so carried out as to represent the composition of the soil? A farmer has several hundred acres of soil; how many analyses are needed "to cover all this ground?" Often on a small farm, if we can judge by the look of the earth, there are a half dozen varieties. There are frequently decided variations within a very small area; and it rarely happens on farms that have been long under cultivation, that one specimen of soil represents the whole. The soil that is annually worked over by the plow, is different from the undisturbed subsoil; and the latter may vary every few inches of its depth. How many analyses then must often be needed! But it is said,—"collect from various parts of the field, and thus get an average." This is but making bad, worse; for the analysis of such a mixture, only represents the composition of the few pounds which have been sent to the chemist; but not that of the millions of lbs. that remain in the fields. In very many cases—not indeed in all—the number of analyses that must be made, renders the whole thing impracticable.

But admitting the soil of the whole farm to be uniform in composition, what are the accidents that may vitiate analytical results? It may easily happen that an egg or snail shell lodge in the identical specimen of soil selected for analysis—then the carbonate of lime may come out too high. The droppings of a dog or bird, will thus make a thousand acres rich in phosphates!

Allowing, however, that such contingencies may be perfectly provided against, and that a competent chemist has made a bona fide analysis of a fair specimen of the soil—is chemical analysis, even of the most refined character, capable of giving constant results on the same soil, or valuable results at all? In 1846 the Prussian "Landes Œconomic Collegium" instituted a series of experiments "to determine in what proportion certain inorganic ingredients of the soil must be present in order to nourish definite plants." To settle this question experimentally, it was concluded to select 14 soils in various parts of Prussia, to have three specimens of each analysed under the direction of such chemists as Liebig, Rosè and others; then to crop these soils from year to year with rape (Brassica napus) and peas, until they were so exhausted as to be able to produce no more; when it was proposed to analyse them again, and ascertain the loss they had incurred. The 42 analyses were communicated to the public, by Pro. MAGNUS in May, 1849, and are accessible to the English reader, in Liebig and Kopp's Report on the Progress of Chemistry for that year. From these analyses, executed by the most competent chemists that the world furnishes, results—what might have been expected, that three analyses of the same soil, carefully collected for the purpose, give variable results. In one soil, for example, one chemist found .009 pr. ct. of phosphoric acid; another .169 pr. ct., and the third .832 pr. ct. In another soil, in one specimen is found a quantity too small to be weighed, a "*trace;*" the 2d yields 1.028 pr. ct.; the 3d only .009 pr. ct. In another soil, two analyses agree in stating the presence of a pretty good supply, one giving .456—the other .651 pr. ct., while according to the third analysis there is *none!* In another soil, on the other hand, two analyses agree that phosphoric acid is absent, while according to the third, it contains .229 pr. ct. Similar variations occur in the other ingredients. Which of these analyses shall serve as the basis of a prescription for improving the soil? The farmer is advised never to have more than one analysis made of his sick soil; if he gets three, they will give him more trouble than employing as many physicians of different schools when he himself is sick. Each one makes a different diagnosis, and demands a different prescription.

MAGNUS calculates that the average harvest of rape seed and straw, from a "morgen," contains 13 lbs. of phosphoric acid. The soil of a morgen taken to the depth of 9 inches, he calculates would weigh 1,944,000 lbs. 13 lbs. is then 0.00066 pr. ct. of the weight of the soil. Chemical analysis is incapable of deciding as to 0.01 in the case of soils, scarcely as to 0.1 pr. ct. How many crops, and how many lbs. of phosphoric acid may be removed from the soil, and chemical analysis never be able to tell the difference?

MAGNUS further shows that from a soil in which the closely agreeing results of three analysts gave 0.0073 pr. ct. of phosphoric acid, three crops of rape were gathered, in '46, '47 and '48, the last of which was greater than the first (no manure was used,) and the three crops, not including chaff, drew from the soil a greater percentage of phosphoric acid, viz., .018 pr. ct. of the soil, than the soil contained according to the three analyses—viz., .0073 pr. ct. MAGNUS remarks—"It follows from this, that plants do not need to find in the soil any much greater quantities of a substance than is required to their development."

Every farmer who has employed guano successfully, knows that 400 lbs. per acre is a good application, often making a crop double and quadruple in its yield. An acre contains 43,560 sq. ft. Taken to a depth of 6 in. it has half this number = 21,784 cubic feet. Assuming a cubic foot of soil to average 80 lbs. in weight, (Johnston's Lectures, p. 291 Am. ed.) we have then for an acre to the depth of half a foot, 1,742,400 lbs of soil. 400 lbs. = 1-43561, = 0.00023 of the weight, = 0.023 pr. ct. of the weight of an acre of soil. Peruvian guano contains say 25 pr .ct. of phosphates = ¼ of the whole. ¼ of 0.023 pr. ct., is 0.0058 pr. ct. Ammonia averages 17 pr. ct. of the best guano, call it 20 pr. ct. = 1-5. 1-5 of 0.023 = 0.0046 pr. ct. These fractions then, 0.0058, and 0.0046, respectively represent the additions in per cents of phosphates, and of ammonia which an acre of soil receives in 400 lbs. of guano, supposing the latter to be uniformly mixed to the depth of 6 inches. A ton of guano would add five times as much, viz., 0.029 pr. ct., and 0.023 pr. ct.

Chemical analysis is utterly incompetent to discover these slight quantities. The addition of a ton of guano to an acre of soil, would make no perceptible difference in the results of an analysis! But the farmer knows

that a soil now giving a moderate crop, will often yield a very heavy one, by adding to it a few hundred weight of guano, and be totally spoiled for several years, on addition of a ton. Yet chemical analysis would give him results practically identical in all these cases.

Practice has taught that exhausted land often recovers its fertility wonderfully, by laying a season or two in fallow. Yet in this case nothing is added to the soil. On the contrary, its organic matter must waste by the ordinary process of decay. The renewal of fertility, depends merely upon a change in the *condition* of the soil. Ingredients before insoluble, become soluble and available; but analysis, at present, is by no means able to follow, and estimate these changes. In fact, if it be admitted that the chemist can estimate *quantities* with the utmost accuracy and nicety desirable, yet he cannot set *qualities, conditions*, in their true light. His attempts at this must ever remain vague and unsatisfactory; for the soil is the subject of perpetual changes, which he can only imperfectly understand, much less imitate.

So much depends upon the *physical* condition of the soil, that analysis alone, can form no safe basis of judgment. Nothing but lichens and mosses will grow on a block of granite. Reduce the granite to pieces as large as pins-heads, and it forms a poor soil. But grind it to a fine, impalpable dust, and wheat sown in it will grow and mature, if it have suitable weather. Yet granite is granite, "though it be brayed in a mortar." It contains the needful inorganic elements, but they are slowly soluble in water. Increase the surface on which water may exercise its solvent action, a million or a million million times, as is done by pulverization; and we proportionately increase the quantity of matter, which the granite may yield to water and to plants in a given time. By simple pulverization, we may convert a mountain of rock into a field, in which the tender grains will almost reach perfection.

The readers of *The Cultivator*, will remember that a few years ago, WELLS of Cambridge, analysed several soils of the Scioto valley, distinguished for their fertility; having yielded excellent crops for many years without manure. The results of the analysis did not essentially differ from those obtained on the poor soils of New England. The extreme fineness of the particles, gave the only clue to the difference in their fertility. English agriculture is full of examples of sandy barrens being converted into productive fields by underdraining, subsoiling, and plowing under green crops, with only trifling additions of manure. In these cases it is a change of physical condition, not of chemical composition, that has caused most of the benefit. Whatever stores of nutriment may exist in a soil, they cannot avail any thing, unless they are accessible to the plant. If the soil is a heavy water-soaked clay, plants cannot extend their roots into it. If it is a wet sand, they refuse to extend their roots in it. But analysis yields the same results, whether the soil is coarse or fine, whether wet or dry. The chemist dries them all to the same degree, and they must alike be ground beneath his unrelenting pestle. Could the chemist analyse the whole field, he could tell its composition to a grain; could he operate with the 100th part of it, his results would be very exact; and with the 1000th part they would be sufficiently accurate: but when from the analysis of a few ounces conclusions are to be drawn as to the treatment of the 2,000,000 lbs. in an acre, or the many millions of a large farm, and this, to tenths, or hundredths of a pr. ct., the matter becomes ridiculous. Chemical analysis is wonderfully accurate when adjusted to the proper scale, but a microscope won't serve to study the stars. The results of the analysis of 10 grains of pure common salt represent the composition of all the salt in earth and sea, because salt is perfectly homogeneous; it always consists of the same elements in the same proportions; but the soil may be the most heterogeneous mixture in all nature, as a glance at its origin shows.

But it may be answered, that it has often happened that the analysis of a soil has enabled the chemist to inform the farmer what applications must be made, in order to renew a lost fertility, or establish it in a soil hitherto barren. This cannot be denied. Cases do occur in which analysis gives strikingly valuable results. But it is yet to be proved, that such cases are common. It may be observed that the prescriptions founded on analysis, usually cover a pretty large ground; they almost invariably recommend those applications which crops most need, and for every one ingredient that is wanting, several are supplied. Thus if potash be deficient, ashes are recommended: if phosphoric acid be wanting, bones, or superphosphate of lime are the remedies; if ammonia be thought needful, guano is advised; while barn-yard manure, is at once a panacea for all these evils. A careful sifting of all these cases, would doubtless strip the results of much of their wonder, and refer many of them to very simple and obvious causes.

I do not doubt that in very many cases a careful *investigation* of a soil—chemical, physical and historical—by a genuine scientific farmer—one, familiar at once with science and practice—would afford safe and nearly accurate data for its proper treatment. But this would be always expensive, and in nine cases out of ten, would not *pay*. *Soil analysis, at the best, is a chance game; and where one wins, a hundred may lose.* It is the royal road to what the farmer should reach by study, and a profound understanding of natural laws. By this is meant that it is no practicable road, not one which should be often trodden by the man of moderate means; athough it may be entered upon by the wealthy and curious, who have no need to work in order to eat. A soil-analysis is always interesting, often valuable, rarely economical. It may amuse the amateur, and instruct the philosopher, but for the farmer its value is small, if he has to pay for it. It is only by the application of the general principles which may be developed from numerous analyses, that he can hope to be directly benefited.

But what shall the farmer do? Shall he grope in the dark? No! But let him beware of false lights which are now-a-days hanging out in abundance. Let him beware of taking advice from two dangerous characters;—the conceited farmer who knows a little science, and the officious philosopher who knows a little farming.

It is far more difficult to warn against a course that is unsafe, than to point out one that will lead to desirable ends. Practice must accomplish many of her ends in her own ways for a long time to come. She should thank Science for rebuking her errors, and should reject them as they become manifest. She should accept the light that Science sheds upon her path, though the rays be those of a taper. Science should carry herself modestly, as befits her youth, and not talk too loudly on all occasions of old-fogyism *vs.* progress. She should remember her failings. The sister of 60 centuries, and she of tender years, should join hands, and walk harmoniously together towards the fields of promise that lie in the fruitful Coming Time. *Munich, May*, 1854.

Construction of Cisterns.

In consequence of the repeated inquiries we receive for information relative to the best construction of rain-water cisterns, we are induced to furnish some brief practical hints on the subject. The great value of an abundant supply of water to houses and barns, and which may be easily had by providing capacious cisterns, renders it important that the cheapest, best, and most convenient mode of construction should be adopted.

The two all-essential requisites for under-gronnd cisterns, are good hydraulic lime, and a supply of clear pure sand. These must be selected from experience or trial, or by choosing such as have already proved efficient for this purpose. Good hydraulic cement will in the course of a few months become about as hard as sandstone. When this hardening process does not take place, it must be attributed to bad materials, or to intermixing in wrong proportions. On the latter point, some are misled by adopting the practice employed in mixing *common* lime mortar, the hardest material resulting in this case where the sand constitutes about five-sixths of the whole. But the hardest *water-lime* mortar cannot be made if the sand forms much more than two-thirds of the whole.

A very common and a cheap form for the cistern is to dig a round hole into the ground with sloping sides, somewhat in the form of a narrow-bottomed tub, and then to plaster immediately upon the earth. fig. 1. Un-

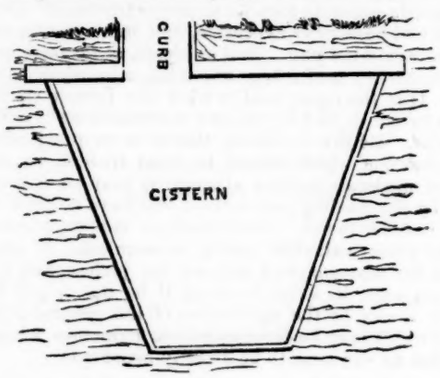


Fig. 1.

less a slope is given to the sides, the mortar cannot be made to keep its place while soft, as it is nearly impossible to find a soil dry and hard enough to retain the plastering by simple adhesion. The top of this kind of cistern must therefore be wide, and consequently difficult to cover very large ones effectually and substantially. The covering is usually made by stiff and durable plank, supported if necessary by strong scantling, and over this is placed about one foot of earth to exclude completely the frost. A hole with a curb, about eighteen inches by two feet, must be left in this covering, for the admission of the water pipe or pump, and to allow a man to enter for cleaning out the cistern when necessary. In cold or freezing weather, it is indispensably requisite to have this hole well stopped to exclude frost, which would otherwise enter the wet

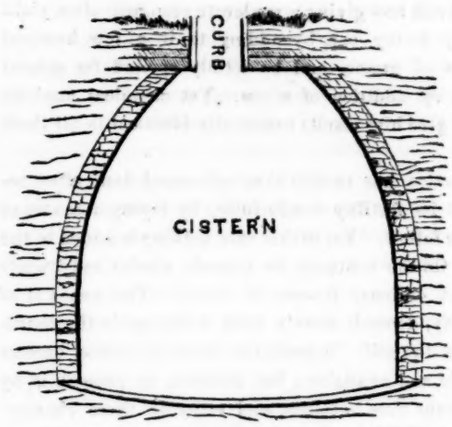


Fig. 2.

cement or walls, and produce cracking and leakage—a frequent cause of the failure of water-lime cisterns.

This is the cheapest form of such reservoirs, but a better, more capacious, and more durable mode is to dig the hole with perpendicular sides in the form of a barrel, and build the walls with stone or hard brick, to receive the plastering. (Fig. 2.) In consequence of its circular form, operating like an arch, these walls will not be in danger of falling if not more than half the ordinary thickness of similar walls. For large cisterns they should be thicker than for small ones. The walls should be built perpendicular until about half way up, when each successive layer should be contracted, so as to bring them nearer together, in the form of an arch, reducing the size of the opening at the top, and rendering a smaller covering necessary. If the subsoil is always dry, or never soaked or flooded with water, the walls may be laid in common lime mortar, and afterwards plastered on the inner surface with the cement. But in wet subsoils, the whole wall should be laid in water lime. If the bottom is hard earth or compact gravel, a coating of an inch or two may be spread immediately upon the earth bottom ; but in other instances the bottom should be first laid with flat stone, or paved with round ones, the cement spread upon these.

The plastering upon the sloping earth walls as first described, (Fig. 1,) should never be less than an inch thick, and if the earth is soft, it should be more. On the stone or hard brick walls, (Fig. 2,) half an inch will be thick enough. Cisterns can rarely if ever be made free from danger of breaking, without giving them at least two successive coats, and three will be safer—the previous coat in each instance being allowed to become dry and hard.

As the best mortar begins to harden in a very short time after mixing, it is best to mix the lime and sand *dry*, and to apply water to small successive portions as wanted.

THE CHERRY SLUG.—This larva, which eats the pulpy part of the leaf of the cherry, and sometimes of other fruit trees, is most effectually routed by a sprinkling of lime. Air-slacked lime, applied in the dew of the morning, usually accomplishes the desired purpose. Dry, water-slacked lime, taken fresh, is still better, being more caustic.

Notices of New Books.

FARM IMPLEMENTS; and the Principles of their Construction and Use; an Elementary and Familiar Treatise on Mechanics, and on Natural Philosophy generally, as Applied to the Ordinary Practices of Agriculture. With 200 engraved Illustrations. By JOHN J. THOMAS. New-York: Harper & Brothers.

This is just such a book as we should expect from the previous well known and highly valued works of Mr. THOMAS. Simple and unadorned, though by no means dull or uninteresting in style, it gives the plainest evidence that it was written—not for the sake of making a book, but because there was information needed on the subjects of which it treats, and with the sole end in view of conveying that information in the clearest and fittest manner. Where the principles of mechanics require minute explanation, as directly or indirectly connected with the farmer's every-day toil, his illustrations are carefully drawn from the farmer's every-day life. He blends together agricultural information and mechanical. And in the somewhat beaten track of works on Natural Philosophy, we think the treatise before us quite as successful as any with which we are acquainted—not even excepting those which our college professors have endeavored to adapt to the wants of schools and academies.

It would be needless to point out in this age of machinery and calculation, the intimate connection between every object about us necessary to our comfort or enjoyment, and the laws and forces of mechanics. While their investigation is to the mere inquirer an interesting study, those who live by the sweat of the brow in almost any capacity whatever, and many whose labor is of the brain, are obliged to understand them. They are at the foundation of man's progress every where and in every way. So long as his experience with matter was his only guide, he was still and stationary. But when he learned to reason from this experience, —when Bacon taught philosophy to be his servant and not his master, his advances soon became quick and real. In every art to which the mechanical knowledge, thus acquired, has been applied, its victories, often unexpected and always wonderful, have been but stepping stones to still higher attainment.

In agriculture, however, until a comparatively recent period, the true principles of mechanics have been unapplied, and as a consequence, little advance attained. And now, although improved implements are the product of almost daily invention, their use is far from being as general as we should wish, or as most imagine. The farmer is not well enough versed in the first principles of mechanics, to see the importance and economy of their being strictly followed in the tools he uses. His fathers gathered in harvest after harvest whi'e they lived, and why should he not take the same course they took, to accomplish the same result? It is recommended by the respect with which he views its authors and by the love he bears the old fields where it was ever practiced; he is strengthened in it by his isolation from his fellows, perhaps by the moderate success which it obtains. He needs, we repeat, most of all, a thorough understanding of the laws and forces of mechanics,—not, it may be, a sufficient knowledge of details to construct, but of principles to appreciate and judge of what he uses,—nor indeed, the investigation of any new principles, but intimate acquaintance and careful application of the old.

Agricultural writers, so far as we know, are very deficient in supplying elementary information on this subject. Loudon rather catalogues agricultural implements than explains mechanical principles. Low's work on Practical Agriculture, requires previous study and is then far from being a full compendium. American writers have, thus far, elicited very little, really new, on any point, and on none are they more lacking than this. In 1849, this want attracted the attention of the committee of the New-York State Ag. Society on Essays and Experiments, of which the lamented DELAFIELD was chairman. Accustomed to view every thing in its practical value and bearings, he appends to his official report the following just remarks:

"While we admit the fertility of the inventive genius of our citizens, we have reason to regret the many obstacles remaining in the path of the farmer, preventing in a degree, the most effective power of mechanism, to aid in his toil and labor. The science of force and motion (mechanics) is necessary and important to the perfection of the farmer's work. Some knowledge of practical mechanics is essential to a right understanding of the tools needful for his use, their proper construction and strength. The force of fluids as well as solids is important to him in draining, irrigation, in protecting his soil from injury by streams. The common occupation of loading his wagon, and other farm operations, often give evidence of the want of knowledge, in relation to the laws of gravity.

"With these impressions the committee suggest the propriety of offering a premium for the best essay on mechanics or the science of force and motion (solids and fluids,) to be divested, as far as practicable, of technicalities, and illustrating the importance of this branch of science in prosecuting successfully the ordinary pursuits of agriculture."

The premium thus suggested and subsequently offered by the society, was the next year awarded to Mr. THOMAS, whose Essay was published in the Transactions for 1850. It forms the basis of the present volume, which has however been re-written, much enlarged, and more amply illustrated. No work devoted to the whole science of agriculture could enter into details so minute as those here furnished, on any single branch; and we think no one branch of agricultural science now more in need of popular elucidation than the mechanical.

Mr. Thomas' book admirably fills this want; and if what we have said of its character and that of its contents, shall lead any one to study it, our time and his, will have been well spent. Even those who have had previous opportunities of acquainting themselves with the principles of natural philosophy, will in its application of them to agriculture, find much that is new and valuable; and we hope that those who have not, will, if they wish properly to qualify themselves for the duties of the farm, immediately enter upon the field which is now spread before them.

Hoven in Cattle.

Mr. DUN, the well-known and able lecturer on Veterinary Medicine at the Edinburg Veterinary College, and author of the excellent Treatise on Veterinary Medicines, their actions and uses, has lately published an article on the above subject which we will attempt to abridge and condense for the benefit of our readers.

The stomachs of cattle being large, complicated, and adapted for the thorough digestion of food, are greatly more liable to derangement and disease than the small and simple stomach of the horse. The rumen, paunch, or first stomach of cattle is liable to undue distention from gas, food, or foreign bodies. Distention of the rumen from gas, constituting hoven or blown, is produced by the eating of wet clover, of turnip tops, or even of a few mouthfuls of any rich succulent food to which the animal has been unaccustomed. Such improper or strange food irritates, and then paralyzes the stomach. It resists the solvent action of the digestive fluids and arrests the digestion of the natural food with which it mingles. Fermentation, with the consequent evolution of gas, is thus established. Choking is another cause of hoven. The irritation produced by the obstruction of the gullet deranges the nervous influence which presides over digestion; and the functions of the stomach being thus arrested, its contents undergo chemical change. Many diseases which disturb digestion also give rise to hoven. This is often observed in diseases of the liver and in inflammation of the bowels. Such cases of hoven are extremely troublesome. They come on slowly, and usually continue until the disease on which they depend is relieved.

The symptoms of hoven often supervene with great rapidity. An elastic swelling rises on the left side; and, in bad cases, may even be perceived on the right side. The back is arched, the hind limbs brought under the body, and the tongue hung out. Saliva drivels from the mouth. The breathing is quick and labored from the distended stomach pressing forward upon the lungs. The rectum is often protruded; and in pregnant cows abortion not uncommonly takes place. Unless the animal be speedily relieved, death will sometimes occur in eight or ten hours, and usually results from the immense swelling arresting respiration, or rupturing the stomach and abdominal muscles.

Treatment.—Many cases recover spontaneously; but it is never advisable to trust to such a result. The means of cure should always be used. These are numerous and various, according to the cause, degree of severity, &c., &c. In a slight case the animal may be driven about, when the symptoms will generally disappear. If, however, there be much distention, dulness and disinclination to move, the driving about may do more harm than good. The introduction of the probang, with the small end downwards, is often useful, the gas making its escape with a prolonged hiss. If it does good at all, it will be at once; and if not, the probang should be immediately withdrawn. All the internal medicines of acknowledged value for the cure of hoven are stimulants. They rouse the paralyzed organ, and thus expel its gaseous contents. Stimulants are generally given in too small doses. An egg shell full of turpentine, a glass of whisky, or a drachm or two of ginger, are absurdly small doses in case of hoven. Ten times these doses may be given, not only with impunity, but with advantage. There is no fear here of causing inflammation, and no hope of success but in the *full* action of an active stimulant. If turpentine is most convenient, give six ounces with a pint of linseed oil. Half a bottle (pint or quart not stated) of whisky, brandy or gin, with two or three ounces of ginger, is also a good medicine. So also are 2 or 3 oz. of sweet spirits of nitre, or 1 oz. of carbonate of ammonia, in some gruel. Such doses should be repeated evey hour until the swelling yields. Friction of the abdomen assists the action of the medicine. When the above prove fruitless, and the symptoms are severe, it will be advisable to fracture the stomach. This is attended with scarcely any danger. It is best performed with a trocar and canula, which is thrust in at a point as nearly as possible equidistant from the prominence of the haunch, the lumbar vertebræ and the false ribs. The trocar being withdrawn the gas rushes through the canula. The operation may be performed, however, with a large pocket or table knife, either of which is preferable to a pen-knife. The wound heals readily, requiring nothing but a pitch-plaster. A dose of physic should then be given, as 1 lb. of common salt and 2 ozs. of ginger, or a pint of linseed oil. Cattle subject to hoven should be fed carefully, and may be benefited by taking 3 or 4 drachms of green vitriol occasionally. They should also have salt always within their reach.

Andalusian Fowls.

FRIEND TUCKER—I enclose you a description of my Andalusian fowls, for the Poultry department of your valuable paper. They are not fully described in any work on Poultry that I have ever seen. The original stock was imported in the bark Asa Fish, by Capt. Isaac Gates of Mystic, Ct., from Leghorn, Italy, in the fall of 1851, and they have been bred in that vicinity since. The cocks are red, with a large single upright comb, deeply serrated, and of the most brilliant scarlet, with wattles of proportionate size. The hens resemble the black Spanish fowls in size and appearance, with a large, deeply serrated, but drooping comb. Plumage of a grey to a mealy white; end of the tail, tipt with black; legs of a bluish white to a slate color.

The importer calls them Leghorns, from the port of exportation, under which name I exhibited them at our county fair last fall, although I was convinced that that they were identical with the fowls mentioned in Dixon and Kerr's Ornamental and Domestic Poultry, pages 210 and 211, as Andalusian fowls, imported from Andalusia, Spain, by Mr. Leonard Barber in 1846 At the suggestion of Gen. R. U. SHERMAN, Chairman of the Committee on Fowls, I have adopted the name of Andalusian Fowls, believing as I do that they came originally from Spain. As layers they are equal, if not superior, to the black Spanish fowls. They are a most valuable as well as beautiful addition to our poultry yards. E. H. BLIVEN. *Hope Farms Bridgewater, N. Y. June* 12, 1854.

The "Economical Manure."

For some time past there has been used to some extent in England and Scotland, an artificial manure, to which the above title has been given. If testimonials are to be relied upon at all, this manure *must* be possessed of very desirable properties. In the month of May last it was analyzed by a competent chemist in Edinburgh, and found to be composed *mainly* of, 1st. protosulphate of iron, or green vitriol, about 35 per cent; 2d, of sulphate of lime, or gypsun, about 16 or 17 per cent; and 3d, of chloride of sodium and other alkaline salts, about 26 to 34 per cent. In one specimen analyzed the chloride of sodium amounted to 16.31 and the other alkaline salts to 10.66, or in all 26.97 per cent, and in another specimen to 17.43 and 16.88 respectively, or in all to 34.31 per cent.

Now, as a manure of such a composition might be easily and cheaply got up by any agriculturist, we subjoin a specimen or two of the testimonials which have been given of its fertilizing properties. One testifies that on that portion of a field of barley on which this manure was sown broadcast, mixed with ashes, the growth of the barley was wonderfully thick and luxuriant to what it was on the other portion of the field. Another testifies to its having most beneficial effects on his garden crops, and to his cattle being very partial to a part of a field of grass to which it had been applied. "Your manure," says Mr. John Davenport of Staffordshire, "improved the wheat very much, and the grass it sweetened, and the cows eat it off very bare all the summer." "Your manure," says one, "was sown with clover, and it is most luxuriant."

It is called the "economical manure," because ¼ to ½ cwt., per acre fully equals in effect 3 cwt., of the best Peruvian guano, and because the saving in cost is thus at least 50 per cent. It is applied with two or more times its bulk of light earth or peat-mud, or ashes or sawdust or anything of that kind, broadcast. It has been also employed in solution. In this state we presume it was applied to some apple and pear trees, of which it is said to have improved both the oliage and the fruit. We may close by stating that it is sold in G. Britain at about or a little over the price of the best Peruvian guano, that is about £12 per ton.

Good Condition in Plants and Animals.

There is no better preservative against the attack of many diseases, both in animals and plants, than such a mode of feeding and care as produces what is generally understood by the phrase 'good condition.' Somewhere lately we met with a statement to the effect that the writer was inclined to depend more upon having his sheep in good condition, as a mode of escaping the destructive effects of grub in the head, than upon any specific remedy or preventive application. The paper or book in which this statement was found we cannot now name, not being able to put our hands upon it after some research,* but we are much inclined to be of the same opinion, as it seems to be a general or universal law that animals reduced by starvation, ill-feeding, filth or any source of debility, are much more commonly attacked by disease or vermin, than when in an opposite or good condition. This seems to be the law also in regard to vegetables. Plants growing on exhausted soils are especially subject to blights and diseases. Clover sickness may be mentioned as one instance in illustration of the operation of this law in the vegetable world. On some soils on which clover has been raised a grea tnumber of times. it can no longer be grown with success. In the spring the leaves wither and die, and the roots, upon examination are found to be passing into a state of decomposition, covered with fungi or the larva of insects. Various considerations and observations go to establish it as certain that the decay of this plant is owing entirely to the want of one element in the soil which is essential to the growth of the clover plant. Clover sickness in land may be owing to some original deficiency or uncongeniality of soil; but chiefly to the circumstance of the soil having been exhausted of the nutriment proper for the plant by previous cropping. The same holds true as to potato-rot and turnep disease, to a great extent at least. For almost always newly broken up pastures or wood land will produce good crops of any of the above named plants, and generally for quite a number of years, when a proper rotation is put in practice.

* Found at length in Co. Gent. for June 1, on page 345.

How to get Water for Cattle.

Mr. Tucker—Many of the otherwise fine farms in Illinois are badly supplied with water for stock. Wells fail, and farmers are compelled to drive their stock oftentimes one or two miles to water.

Such trouble can be obviated in most cases, by selecting some low plat, underlaid with clay, and with a span of horses, plow and scraper,(such as are used on roads,) one man could in three or four days, scrape out a hole, four or five feet deep, and large enough for a hundred cattle to drink from at once. Then a lot of hogs should be fed in the excavation for a few days, until the clay was compressed and rendered waterproof. When this is done, a few furrows leading to higher land, would form a ditch for carrying the water into the hole, and filling it the first rain. In this way a fair supply of water may be obtained. I would advise the setting out of shade trees around the pond, as they would have a tendency to preserve the water pure and fresh, as well as affording a refreshing shade for stock. H. M. M. *Armington, Ill.*

Productive Sheep.—Mr. Burwell of Clarke county, Va., has eleven ewes, which brought him the last winter, twenty-eight living lambs—one of them had four, four had three each, and the others twins.

California Products.—The Californians boast largely of their big turneps and potatoes. Two turneps are mentioned, weighing 29 and 36 lbs. each, and a sweet potato weighing 9 lbs.

New Method of Fertilizing Land.

I believe it is generally argued by farmers, that shade tends to impoverish the soil; but after a careful examination, I have come to the conclusion that shade makes land rich. Perhaps those opposed to this theory will say, if shade makes land rich, why does not the soil under every large tree become extremely fertile? It seems to me that every intelligent husbandman might answer this question without much hesitation. The reason is this: the growth of the tree is constantly drawing the strength from the soil, and if the shade did not tend to enrich the land, the soil would soon be so much impoverished that the tree would die. If any person wishes to be convinced of the truth of this new theory, let him try an experiment on a small scale. Take a piece of poor ground, one rod square, and cover it over with brush two feet deep; let it remain covered in this manner four years; then remove the brush, and if I am not very much mistaken, he will find that the soil has become rich, although no manure has been added. Let any man enter the forest, and examine the soil which has had the growing timber consuming its fertilizing matter for centuries, and he will find that the soil is still very rich. Now I will ask how the fertility has been kept up, if the shade does not tend to fertilize the soil? I shall doubtless hear many say it has been kept up by the manure made of the leaves of the trees. I admit that the foliage tends to fertilize, but the quantity of matter returned to the soil in this way is so small in comparison to what is taken up by the growth of the timber, it is evident there must be a greater source of fertilization, or the soil would long since have been exhausted.

By shading land properly, the soil is made to undergo the putrefactive process, and is converted into a strong and durable manure. Ask farmers that raise flax and spread it upon their land, if the grass is any larger where the flax was spread than elsewhere: they will answer, yes. You may ask them why it is larger; they will say the flax has enriched the land. Ask them how it has enriched the land, and I presume to say, not more than one in ten can tell you.

The cheapest and best way that I think of to shade land, is with clover. Seed your land thick with clover, and let it grow as large as possible without mowing or feeding it off; (for the more dense the shade the sooner the soil becomes rich;) let it remain shaded in this way two or three years, then plow it up, and if I am not mistaken you will find your land is rich, notwithstanding you have put no manure upon it except the clover seed.

Let this much suffice; for to him whose mind is untouched by this, a volume on the subject would be useless. ELIHU CROSS. *Potter Hill, Rens. Co., N. Y.*

The simple process of shading land cannot impart any fertility whatever, else the north side of a building would soon become enriched by the process. Neither can the *shade* of trees prove beneficial to the soil, and although their growth is constantly withdrawing the strength from the soil, yet the annual extension of the roots, and their penetration into the subsoil, brings them successively into contact with fresh portions of earth, and their growth continues unchecked.

But when a *porous substance* is placed upon the surface of the earth, sufficiently dense to prevent the evaporation of its moisture, and at the same time to admit the free passage of rain and air, two very important advantages are gained, namely, the *preservation* of the riches of the soil, and the *addition* to its fertility by the condensation of volatile manures through the agency of rain, and by the gradual decomposition of the surface soil, through the action of air and water. If the earth is covered *air-tight*, as for example by a solid stack of hay or straw, resting directly upon it, no improvement follows, as would be the case if a pervious stratum merely was laid on its surface. For the same reason, the *subsoil* is never benefitted by the shade of the upper soil, because it is totally excluded from air and moisture. The great advantages of *mulching*, and of mellow cultivation, for fruit trees, are owing to a precisely similar cause; namely, a *porous surface*, either of litter, or of pulverized earth, admitting air and moisture, and preserving from the escape of the moisture below. Mulching with *old straw*, or with *pulverized earth*, operate alike favorably.

Insects on the Elm.

MESSRS. EDITORS—I see in the Country Gentleman of June 22d, mention is made of an insect found very abundantly on *elm* trees at this place (Hudson N. Y.,) and proving destructive to the foliage, and inquires for a remedy.

The elm trees of New Haven, Ct., ("the city of the elms") have twice been threatened with destruction by the ravages of insects. These were small worms or *caterpillars*, which fed upon the leaves, sometimes entirely destroying them. When they attain their growth they buried themselves in the soil, passed through the *chrysalis* state and came forth as small whitish moths or butterflies, which deposited their eggs in its branches, from which were hatched the worms ready to commence new depredations.

Now of the perfect insects, or butterflies, those of but one sex were furnished with perfect wings and could fly. These flew up the branches, while those of the other sex crawled up the trunk, and deposited the eggs upon the twigs. The trees were saved from destruction by placing a small leaden trough (generally a leaden pipe cut open on one side,) closely around the trunk a few feet above the ground, which was kept filled with *oil*. Through this the insect could not pass, and consequently the eggs were not deposited.

To make it effectual, all the trees should be so treated for one or two years, and any one who visited New Haven in 1851 or 1852, saw them there so guarded.

I state the above *upon the authority of others*. I have never made any observations upon the habits or nature of the insects, myself, although I have often seen them, and the trees so protected. I state this to direct attention to those who know better, and undoubtedly any of the authorities or citizens of that city would give any more information if requested. B. *Ovid, New-York, June 23.*

Irrigation—To Agriculturists.

There is no subject connected with the business of the farmer of higher moment than that of Irrigation. Its importance is manifest from various reasons. Everywhere throughout our land, the great element of fertilization is so abundant and may be made to increase the present and continued income of all cultivated lands so greatly, at such a comparatively small outlay, that it is believed that were the attention of those interested fairly directed to it, they would not be long in deciding to commence the experiment. It need not be called an *experiment*. The thing has been tested ages ago and is still in successful operation in many parts of the old world. Even in the British Isles, where the humidity of the climate would seem to preclude the necessity of such a course, and prevent the beneficial results elsewhere obtained, the work has been prosecuted with decided success. We have found under-draining of undoubted utility, and we may derive greater benefits from Irrigation than has been obtained from under-draining. There are thousands of acres of land capable of producing from one half more, to double what they now do annually by Irrigation, and the expense would in many cases be paid by the increased products the first year.

What investment can the wealthy farmer seek for, that will promise better interest; or what means can the man devise who is struggling to free his broad fields from the incumbrance he was obliged to leave them under at the outset of his purchase, than by executing a judicious system of Irrigation? There can be no mistake about it; in nine cases out of ten it will pay you fifty and even one hundred per cent. You may use guano and phosphates and sulphates but forget not that stimulating element which the God of nature has wisely ordered should be so intimately connected with vegetable and animal life. Bear in remembrance that the small stream that waters your pastures and glides gently through your meadows, may be made to increase the income of your farms sufficiently each year to pay your rates, furnish you with the Country Gentleman, and make good additions to your library; or if need be, relieve the perplexity that some labor under on each returning spring, about the first of April or the first of May,

Let every intelligent farmer who is satisfied, or wishes to be satisfied of the truth of these suggestions, shoulder his shovel and pick and forthwith begin the work. Be assured it is a work in which you will never flag, until you have done all you can do, in the way of Irrigation.

The subject commends itself to the attention of agricultural societies. Every thing held up by them elicits experiments, induces an honest, commendable rivaly and competition. The enterprising farmer who succeeds in producing the greatest amount of butter or cheese from a given number of cows, receives a premium. He who lays the greatest amount of under ground drains, is alike stimulated. Shall we not then in future, Gentlemen of Executive Committees, have the attention of an enlightened community called to the subject, through your means? May you not reasonably appropriate a portion of the funds at your disposal in this direction, to those who succeed best in watering their lands and make 'honorable mention' to such others as you may deem deserving? LEMA.

How to Increase the Manure Heap.

Mr. TUCKER—In the Country Gentleman of June 8th, inquries are made by a young farmer of Conn.,—one about the best method of increasing his manure heap. I will state a plan which I have seen practised here, and where one is destitute of muck and other materials for absorbents, it answers a good purpose. About the 1st of Oct., plow a piece of pasture or meadow, where it yields the least quantity of grass; cart the turf and cord it into a snug heap, near where it is to be used for bedding during winter, for his stock. If the heap is of good size, and well constructed, it will heat and crumble into a dry powder by the time he wishes to use it in winter. An important requisite in any kind of bedding is that it be in as dry a state as possible, because the object being to absorb and retain the urine of the various animals, every pound of water contained in the bedding shuts out an equal amount of urine. I would therefore advise to keep the heap well covered with straw, or some material to prevent freezing; also a roof of boards to prevent the rains from filling it with water. From calculations made, an acre of grass land will yield 400 loads of turf. Land so treated, should be liberally dressed with manure in the spring, and planted with some crop. Its fertility will then be kept up, besides yielding a large proportion for enriching the rest of the farm.

Respecting spent tan for an absorbent, I would advise him to try the plan. A short time ago, I came across the field of a farmer near here, which was composed almost entirely of fine bark thrown out from an old tanning establishment. It had probably been enriched by the scrapings of hides for many years, and other enriching materials about the works. On this bed of clear tan, was growing a fine thrifty lot of apple trees. The man also stated that he had grown a very heavy crop of corn the past season. Respectfully Yours, LAWRENCE SMITH. *Middlefield, Mass.*

Future Prices.

A "Practical Farmer," in the last *Mark Lane Express*, closes a lengthy article on the above subject as follows:

Farmers may for once, depend upon having the corn trade for the next year very much in their own hands. There never was a time when the *world's stock of grain* was so nearly exhausted; and one great source of supply—Russia—is shut from us by the war. Why, then, should farmers hurry their next harvest stock to market? Prices must inevitably be good, if they will only be reasonable and cautious; there can be no just cause of alarm. Let every farmer take time. Let the aim be to keep up a fair, steady, regular supply, and he may then rest assured he will receive a fair price throughout the year.

Meat-Market Supplies.

The raising of cattle, sheep and poultry for the supply of our village and city markets, is every day becoming a matter more deserving of the attention of the agricultural community. The demand is becoming more and more difficult to supply, as larger *quantities* and finer *qualities* are being continually sought after. As raising supplies of beef, mutton, veal, lamb, poultry, &c., attracts more and more of the attention of farmers, in like proportion will all information be welcome which furnishes accurate and reliable details as to the most economical methods of fatting and getting ready for market any of the above products. The breed of animals most easily fatted, and the kind of feeding which is at once most effectual and most economical, are points upon which we may yet obtain considerable increase of reliable and useful information.

The following observations from *The Mark Lane Express*, in reference to the past and the future of the business of supplying the demands of the butcher and the meat market man, hold true of this country and the American population, as of those on the other side of the channel, and seem deserving the attention of graziers and others.

Amongst the many permanent improvements in agriculture which have taken place within the past fifty or sixty years, none deserves a more prominent place, or is of greater importance, than the production of meat; it has fully kept pace, if it has not exceeded, the production of grain. We fear not to assert that, taken separately, more *grain*, or more *meal*, is now produced by the agriculturists of this kingdom than was formerly produced by taking both collectively. The introduction of improved courses of husbandry has done very much to effect this, but the attention that has been latterly called forth to the adoption of every practicable improvement of which the business of a farmer is capable of sustaining, has done much more. The growth of new varieties of grain and of roots and vegetables, has done immense good; these assisted by improved culture and artificial manurings, have wrought astonishing alterations and great increase of produce on every intelligent man's farm; but we think these have been exceeded by the improvement made in the breeding, feeding, and management of the live stock of the farm. Contrast for a moment, the cattle of sixty years since—the long, high, thin, lean-fleshed, large-boned, hard, unthrifty animals of that day, with the compact rotundity of shape, the soft, the mellow, thrifty animals of the present day; the former fed at six and seven years, the latter generally fatted the third year, often earlier. The same remark will apply to sheep and pigs, and not less to poultry; early maturity and quickness in fattening have been looked to as the deciding characteristics in every variety of meat-producing animal. In keeping with the improvements that have arisen, and the wonderful accession made to our supplies fo animal food, has been the alteration in the tastes and habits of the community. The whole British people have become large meat consumers, so that consumption of animal food has gone on progressively with its increase, and now bids fair to outstrip it; and not only has its taste for animal food become general, but it has assumed a new shape or feature. Beef, mutton, bacon, are looked upon as too common dishes. Lamb, veal, small pork joints, and poultry must now be served up at every table; hence the amazing demand for lamb, calves, small porkers, and poultry; and this will go on and increase, as the habits of the people are becoming daily more refined, and perhaps it is not too much to add, more luxurious.

The Crops at the West.

The following letter came from a reliable source, and expresses the honest opinions of a competent judge; and we are sorry to have to add that its statements are confirmed by representations recently made to us by another gentleman, who had just returned from a tour over a part of the same district. We had supposed the wheat crop much better than estimated by our friends, and cannot but hope that it will yet prove better than here anticipated.

BUFFALO, 27th June, 1854.

MR. TUCKER—Having been on a tour through central and western New-York, as also through part of Upper Canada and some of the western states, I can speak with a certainty respecting the crops. Central and western New-York has a very poor crop of winter wheat, it having been hurt very much by the severe frosts in the end of March, say from the 17th until first April. The wheat was not hove out, but an immense quantity of it killed out-right by frost, and it will be a very small crop. Owing to the late drouth, hay must be a very light crop, and it is selling at famine prices already. Corn and oats may be a good crop with seasonable weather. The weevil in the wheat, about the same as last year. In what I saw of Upper Canada, the crops are even worse than in central and western New-York. In Michigan, Indiana, and Northern Ohio, the wheat is as near a *total failure* as it possibly can be, the weevil having taken nearly all. Occa.ionally there is a field of Mediterranean wheat, that is pretty good; but very little wheat in those places mentioned, will pay for threshing. I never saw any like it except in Dutches Co. N. Y., in 1842. To commence at the east of Cayuga county, and go west of Michigan and Indiana, there can not be near enough of wheat to bread the people, but there is abundance of old corn. I expected to have found the corn in the west much larger than it is; but farmers in general told me it was as good as it generally is at this season. Their grass crops are very good, and their oats also. I never saw such crops of oats. I want you to put this letter where you can refer to it at any time—you will find it a true account. Yours, &c., AN OLD FARMER.

MINNESOTA.—We are indebted to Col. O. H. KELLEY, Cor. Sec'y Benton Co. Ag. Society, for a pamphlet containing the proceedings of the Society at their annual meeting in December last. It includes the address of Gov. Gorman, and the annual report of the Secretary, Col. Kelley, both of which are valuable papers, and from which we hope hereafter to make some selections for the *Co. Gentleman*. From returns made to the Secretary, it appears that there were grown in this new county, 11,400 bushels wheat—14,065 oats—5000 corn—160 rye—970 barley—299 beans—315 buckwheat—11,000 potatoes—15,370 ruta-bagas and turnips; wild hay cut, last year, 850 tuns, and 3,025 bush. cranberries, and 1,000 wild rice gathered.

Vegetable Physiology—Weeds.

EDITORS COUNTRY GENTLEMAN—Perhaps there is no other item of expense and labor more considerable, in farming operations, besides the actual cultivation and securing of crops, than that of killing weeds, those scourges of the finest farming sections of our country—hence something said upon the subject is always in place, even if not new.

There are but three modes practical, for their extermination, frequent cutting, rooting them out, either by the hand or by the plow, or similar instruments, or choking them out with more luxuriant crops. The mode employed must of course be decided by the circumstances of the case.

All plants, (save the lowest orders and some parasitic plants,) draw their subsistence, their food, from two sources, by means of two very different sets of organs: from the soil by means of the roots, and from the air by means of the leaves. *Both* of these are essential to their well-being, the sap circulating from the one to the other, and any attempt made to kill the plant must be aimed at one or both of these organs. The roots absorb water, and in it are dissolved the various materials found in the soil, the same that are used in building up the vegetable structure, but this sap is not yet ready to perform its ultimate office. It must undergo certain chemical changes, and these must take place in the leaves, under the influence of light and air. A portion of the water is evaporated, the sap becomes thicker, and new substances are formed by the addition of new materials absorbed by the leaves from the surrounding atmosphere, principally carbon from carbonic acid, and nitrogen from ammonia and perhaps other sources. This sap, thus changed, is ready to perform its office, and nourishes the plant, adding to its growth as it passes down again toward the roots. Every one has noticed the change in the sap of the maple or other trees when the leaves begin to grow, in the spring. In many plants, such as the trees and many herbs, the sap passes up through the wood, (the sap-wood of trees,) to the leaves, is then changed, and passes back towards the roots between the wood and the bark. And here the increase of diameter takes place, every year adding a new ring of wood. In other plants, such as canes, grasses, palms, &c., the sap passes both up and back in the interior of the stalk, and here also the increase of diameter takes place. Such plants are destitute of a true bark. The difference of the modes of growth characterizes the two great natural divisions of flowering plants, as described by botanists, but in both cases the relative uses of these organs are the same. The leaves, to perform their peculiar office, have many openings or pores (*stomata*) in their surfaces, to absorb the necessary gases, and also the dew and atmospheric moisture, and they present a very large surface by their immense numbers, opening their myriad mouths or pores to catch the desired materials from every passing breeze, purifying our atmosphere at the same time that they minister to their own wants. To perform their office the leaves must be *green*; they refuse to work when any other color. The colored leaves of autumn, the blanched leaves of plants growing in darkness, and the colored petals of flowers, will not elaborate sap and fit it for use of the vegetable economy. We can judge of the luxuriance of any crop by the relative shade of green it assumes. From their relation to the air leaves have been compared to the lungs of animals, and called the respiratory organs of plants; but the analogy does not hold good in many important particulars, yet they are no less essential to their economy, and we will *always* kill a plant if we keep it entirely deprived of leaves for any considerable length of time.

The ultimate aim of the plant seems to be the perfection of its seeds, and to this end it puts forth all its energies. It is in most vigorous growth at the time of flowering, and many species if they be cut at this time, may be effectually killed. They appear not to have strength to put forth fresh leaves. This in a measure appears to be the case with the Canada thistle. I have known them nearly exterminated by a single cutting, when they were in the proper stage, that is, when some of the earliest heads were just in flower, but the majority not yet expanded; and this operation if performed several times is sure to kill them—the only impracticable point is to cut them *all* and at the right time. The season, too, appears to make some difference, they being easier killed some years than in others. I have known a man to sell "recipes for the sure killing of Canada thistles," for $10 each, in a district troubled much with these pests, and his secret consisted in cutting them twice each year, on the 20th of June and 20th of September. This would kill them entirely, if effectually performed, if not in one year, in two or three. The time should be varied, however, with the season, some being so much earlier than others. All weeds that can be cut, that can not be got at easily in any other way, should be cut two or three times each summer, and there will soon be left few to cut.

But there are many to which this is not applicable, from various circumstances—their size, habits, the grains in which they occur, &c. Such is the case with such as trail on the ground, some that commence flowering very early in the spring, some that are not killed short of cutting a great number of times, as is the case with some troublesome grasses, and others that grow only in certain grains, and are not easily distinguished and separated from them. To these we must apply one of the other methods, rooting them out, or choking them out. Some may be easily exterminated before they become too numerous, by pulling them by hand, and every farmer should be in the habit of plucking up such occasional plants of suspicious aspect as he may meet with on his farm, even if he does not know that it is a troublesome "weed," for some only become so when very numerous. Happy would it be if every farmer was a botanist, to quickly determine and recognize all unusual plants, and a vegetable physiologist, to use the best means for their extermination, if such were desirable.

Often weeds are not suspected to be such un'il it is too late to get rid of them easily. For all these that it is not practicable to cut, plowing, *good* plowing, or other similar means of stirring the ground, is the way to treat them. In fallow ground, stir it often. Whenever a weed is seen pushing a leaf above the surface, plow or cultivate again, give it no chance at the air, and if the season be a moderately dry one, a single summer is often enough for their effectual ex termination. Some farmers prefer this method to all others in killing Canada thistles. All practical farmers understand this part of the subject, as well as the necessity of having it thoroughly done, if we would have it effectual. As to the auxiliaries to the plow, the cultivator, the harrow, hoe, &c., there is much difference of opinion among those having any considerable experience, some preferring one, and some another, according to the weeds they have been dealing with, the soil in which they grow, and other circumstances.

The last method, "choking" them out, (I know no better term to use than the popular one,) is only applicable to some weeds and to some soils, where we can get a cultivated grain with stronger vital power, or having a stronger affinity to the soil, than the weed we wish to eradicate, which by its luxuriant growth, smothers the feebler species, and robs them of their necessary means of subsistence. In all highly cultivated farms, many weeds are partially or entirely kept subdued by this method, incidentally to the increased care in cultivation.

These three methods combined can always be seen on well managed farms, that have weeds, until they are expelled, and that all must be used, is evident to any one who has studied their habits, and the circumstances of their growth.

Many can only be exterminated by years of labor and care, and even then only by the most unceasing vigilance. Such is the case with the common chess, or cheat, (*Bromus secalinus,*) and we need no stronger proof of the tenacity with which it clings to soils, than the fact that many good and observing farmers, entertain the belief that it is transmuted wheat! Its seeds will remain in the soil for many years, and yet ger minate when exposed to the right influences, and a few seeds germinating will soon seed a large field. I have seen a piece of new land sown with wheat, containing it, where it took ten years of unceasing attention to eradicate it. It would spring up with the grass of pasture land, and with other grains besides wheat, often of the most diminutive size. I have picked specimens not more than three inches high, bearing a single small spikelet of three or four seeds, which were perfect, and capable of perpetuating the race. Under the most favorable circumstances this same plant will produce as high as two or three thousand seeds. I have met with an intelligent farmer who says that "he has counted" the latter number on a single plant that sprang up in his garden. Under such circumstances is it wonderful that some think it impossible to get clear of this almost universal pest? Especially, too, when so many labor under the mistaken idea that its seeds will not grow, and hence take no pains to keep it out of their barnyard manure. Yet it will yield, if properly attended to, as we have abundant proofs and examples.

Nor is this by any means an extraordinary case of the *flexibility* (so to speak) and fruitfulness of some species. Last summer, in making some investigations upon various weeds I found other cases just as remarkable. Several specimens of the common Mayweed (Maruta cotula) growing by the road side, had from 50 to 150 heads, and a large one, though by no means an unusual large one, bore 305. I counted the seeds in a number of heads, and the average was 173 seeds each. Allow but an average of 100 seeds per head, and we have 30,500 seeds to this single plant. At this rate a dozen plants would seed an acre, and have a seed every four inches apart, or nine on each square foot. Yet this same plant under less favorable circumstances, will assume a very insignificant and feeble habit, so as to be entirely unnoticed by the careless observer. I have seen many specimens less than two inches in height, bearing a single small head, and I have one specimen in my herbarium which grew but three-eights of an inch above ground, or is but seven-eights of an inch long including the root, bearing a perfect, though very small head of flowers!

Among other plants of this same natural order, (Compositæ) I counted and estimated the seeds of several species. On a good sized Canada thistle (Cirsium arvense) I counted 150 heads. This was larger than the average, but by no means an unusually large one. Some of the heads, especially those which flowered late in the season, contained only *false* seeds, and nearly all contained some in this condition, but they contained generally from 50 to 100 good seeds per head. This would give a yield of several thousands per plant, so that when we consider the other means by which it is propagated, its perennial running roots, (subterranean stems of botanists) we have a clue to the cause of the facility with which this weed spreads, and the tenacity with which it clings to its favorite soils. I have seen these roots at a depth of three feet in quite hard subsoils, and (at Ithaca in this state) in a deep sandy soil I have met with them at a depth of ten or twelve feet from the surface.

A common pasture thistle (Cirsium lanceolatum) of large but not uncommon size, bore 350 heads. Three of these heads, not the largest, but above the medium size, yielded respectively 457, 417, and 573 perfect seeds. Allow an average of but 300 seeds per head, and we have over 10,000 seeds for this single plant. This seems like a large number; it is so, but I have seen thistles twice as large as the one noted, and I dare say that many specimens we see in pastures and by the road sides, will yield over 1000 fold.

The common burr dock (Lappa major) bears many hundreds of heads, and 60 seeds is not an uncommon number to find in a head, but it is a considerable above the average.

This great productiveness or range of growth is not

confined to the Compositæ, of which I could give many other examples. Among the *Cruciferæ* the wild mustard (Sinapis arvensis) produces many hundreds of pods, each with several seeds, yet I have a perfect specimen but little over an inch high, and I have observed many not over three or four inches high, growing in hard soils, perfecting seeds there to germinate and overrun the field when the circumstances are more favorable.

One more example will suffice. The common mullein (Verbascum thaspus) often springs up so abundantly that some have supposed it "a spontaneous production not originating in all cases from seeds." (I wonder that no one has advanced the theory that it is metamorphosed *wheat;* it often spring sup most abundantly on wheat stubbles that have not been seeded down, or new land, and I know of no law that will change wheat to *chess* that will not carry it farther and produce *mullcins.*) The seeds of this plant are very light, and although not furnished with wings or down like thistles and some other seeds, are easily blown a considerable distance by high winds. They are produced in almost incredible numbers. In August last I noticed one by no means a very large one, still blooming and growing, which would most undoubtedly have grown larger if not destroyed. The main spike of flowers and seeds was about three and a half or four feet long, with three smaller lateral ones. This plant bore about 1500 (as proved by actual counting) fertile *capsules* of seeds, besides many barren ones. The seeds of several were counted under a microscope, and all counted contained over 500 good seeds each; one largeone contained 680. Allow an average of but 400 per capsule, a number I think not too high, and we have a yield of 600,000 seeds on this single plant! At this rate, one plant would seed 14 acres, having the seeds but a foot apart, and a gill sown, producing in the same ratio, would yield over 2300 bushels!

Further illustrations of this kind are needless. I bring up these to show how much a single plant may do, and hence the extreme care with which they should be prevented from going to seed, and also the flexibility of their natures, adapting them to most unfavoracle circumstances of growth, yet ready to come forth when these circumstances are changed for the better—and also the necessity of more than one plan of operations to kill them. I would like to say more of the length of time that some seeds will lay in soil and still grow, and also the means of recognizing some of the most noxious weeds, not yet everywhere common, but I have already extended this to an unintentional length. Yours truly, Wm. H. Brewer. *Ovid, N. Y., June* 16th, 1854.

Large Herd of Cattle.—B. P. Johnson, Sec'y N. Y. State Ag. Soc'y, who recently made a tour through western states, says that one gentleman in southern Illinois, has a herd of 1,900 cattle, and that is about the usual number he keeps. They would form an interesting sight arranged in rank and file; and placed closely side by side, as oxen are when yoked, would extend in an unbroken rank of more than one mile in breadth.

Time for Cutting Buckwheat.

Messrs. Editors—Will you do me the favor to inform me at what season of its growth, it is best to cut buckwheat. It continues growing and blossoming with us, long after the first grains are ripe, even after the lower part is brown and the leaves dead, (of course I mean the lower leaves,) I am therefore puzzled to know when it should be cut, as it is seldom sown here, though it both grows well and produces well. Do the lower or first ripened grains drop off or do they adhere until cut? I will be glad of any information relative to the harvesting and preparing the grain for use. J. D. L. *Aiken, S. C., June,* 1854.

It is hard to give a precise rule for the best time to cut buckwheat. The grain continues to ripen successively, and while most of the stalks remain green or succulent, these grains will not drop off. It is therefore best to let the crop remain so long as the amount continues to increase by successively ripening portions. But as soon as the plant loses its fresh appearance, and the first ripened portions are found to separate easily, no time should be lost in cutting. The rule with some farmers in the north, is to allow the crop to stand till the first night frost, and then to cut as quickly as possible, before the shelling process commences. But when frosts do not come early, it is cut before. As soon as the stalks are dead or dry, buckwheat threshes with great ease, but not before; hence the reason that when but partly dried, it is often found so difficult to thresh. At the north, it is usually sown during the early part of summer, sometimes nearly as late as midsummer; if sown too early, the grain does not set so well.

Stock Barns.

Messrs. Editors—A subscriber, in a recent number of your valuable paper, inquires for the best plan of a convenient barn for the accommodation of stock. If not the best, the following description applies to a very convenient one for the purpose designated.

The *width* on the ground should be sufficient for a floor, with stables on each side, running the whole length of the barn, and the *length* should be in proportion to the amount of stock requiring stable-room in it.

Above the stables, the two sides should project from six to eight feet. The object of the projection is to give more room above for hay, stalks, grain, &c., and, at the same time, protect the manure thrown out from the stables below. There should be a cellar under the floor for storing roots; the stable floor may be made tight, and the urine conducted by gutters, at the foot of the stables, into capacious cisterns convenient for pumping into the compost heap. Or, if not wanted for that purpose, the liquid manure collected may be carried out in water-carts and applied by irrigation; whats ever use is made of it, it is more convenient in cistern than vats under the stables.

The covering should be made tight for warmth, and painted to give neatness, beauty and durability.

Such a barn will certainly accommodate more stock, than the same number of feet of inclosure in an octagonal form as figured and recommended in a late number of the "*People's Journal.*" It may be more convenient to feed stock arranged in a circle, but such convenience is purchased at the expense of waste room at the foot of the stalls. O. C. G

Culture of Buckwheat.

It is best to be sown by the 10th July—three pecks to the acre, on land well mellowed up—sandy soil suits best. It is a bad crop to continue to sow on the same land, without applying any manure. A dressing of plaster and ashes suits best. It is a good crop to ameliorate newly drained land. Such ground can be got in better order for this crop than any other, and the yield is great. Sow grass seed with the buckwheat if wanted for pasture; or, as good a way is to sow oats in the spring, and seed down. Never leave the ground bare, as it impoverishes the soil. Never plant corn after buckwheat, if you expect a crop, and I prefer not to plant it at all; on good land, rye or wheat will do well, as it leaves the land very light and mellow, and clean, with the exception of lots of buckwheat that will come up. By sowing three crops in succession of buckwheat, you will run out every particle of vegetation, and leave the land sour. Would it not be a good crop for Canada thistle ground? G. W. P.

Crowbar—No. 2.

MESSRS EDITORS—Owing to the late snows, followed by the unusual drenching rains, I have not applied the use of the crowbar as much as usual this season; but now planting is done, I intend to improve the few days between planting and hoeing by diging stone and placing them into permanent wall; and I would through your columns, invite my brother farmers, who are occupying rough stony farms, to do likewise. I conceive that every rod of stone wall thus built, adds to the value of the farm in at least two ways, first, by establishing a permanent fence; and second, by the removal of stone from the ground, thereby fitting it for the plow. Last year we built some 70 rods wall, with four feet bottom, 4½ high and 2 feet on top. We do not expect to do as much this. I know this does not tell like going to California to heap up gold, but it is a satisfaction to me to know that my labor has not been spent in vain, but will tell when this generation have passed away. As the ocean is made up of single drops and little atoms form mountains, so will these little industrial performances subdue and thus renovate rough, barren and unsightly farms. Let us keep doing. A. YEOMANS. *Columbia, Ct.*

Ventilating Haystacks.

The Rural New-Yorker gives the following as a common mode of effecting the ventilation of haystacks in England and to prevent their heating by fermentation: A large sized English grain-sack. such as will hold some 5 bushels of grain, being 2 feet in diameter and 4½ long, is filled with chaff or cut straw, and placed upright in the center of the stack, which is built round it. As the stack rises, the sack is drawn upwards, thus leaving a hole or chimney in the middle, for the passage of the heated air. An empty salt-barrel, with an iron rod across the tob for a handle, would be likely to suit a Yankee better, and would draw upwards easily if the hay was not built much above the middle or swollen part. This would doubtless be a good contrivance for corn-fodder stacks, which so often suffer for a want of ventilation.

Galls on Horses.

"What is the best cure for sores on horses made by the chafing of the harness? R. M. C." In the first place, see that the harness does not injure the animal—be careful to keep good, elastic, well stuffed collars—if hard, pound and oil them; if the animal is unusually liable to injury, procure camel's hair pads. Be careful never to put the horse te any unusually severe labor. Constant and light service will gradually harden the shoulders. Washing with cold water at the close of working will be both useful and refreshing. So much for prevention. When the skin is much worn or broken, let the animal rest, or pad the collar so as not to touch the sore; the harness may be often drawn so as to lighten the pressure on those parts. A powerful local astringent will often be useful for an actual sore; white lead is common, but sulphate of zinc or white vitriol is better in every respect, an occasional application of which in addition to washing with cold water will generally effect a speedy cure.

Breeding from Broken-Down and Diseased Mares.

This not uncommon practice is one great cause why there are so many horses of unsound constitutions, so ready to break down or take on disease from overworking or other errors in management. True, a horse of the soundest and strongest constitution will break down under bad treatment—such treatment as it pains us to witness not unfrequently;—but the produce of an old diseased mare will break down under bad treatment much more readily than that of perfectly sound and healthy parentage. For example, it is well ascertained that broken wind can be propagated, when either sire or dam is affected with that disease; and that, when inherited in either case, there is a very high probability that when any produce of such diseased animals is put to work, it will soon become thick in the wind, and become broken-winded at an early age. It is poor policy, therefore, to breed from an old broken down or broken-winded mare. Better to shoot the old creature, and breed from a young and perfectly sound mother The colts will be worth enough more to cover abundantly the difference in the cost.

Whey for Pigs.

A neighbor, extensively engaged in the manufacture of cheese, uses the whey of his dairy, with an admixture of meal from corn, oats, and any grain that he has to spare, as feed for his pigs, and thinks that they thrive upon it very much indeed. The meal is sometimes stirred into the whey in the raw state; at other times it is boiled in the whey, making a thin pudding: and at other times still, the whey is heated and poured upon the meal, and then stirred. A little salt is used in the latter modes of preparing this food, about as much as would make a pudding palatable to human beings. Do not many waste their whey? Might not those who make cheese on a large scale, make the raising and fatting of pigs an appropriate accompaniment to their dairy business?

What shall we Substitute for Guano?

The supplies of guano must have some limit. This seems almost self-evident. It did not lead to any practical result however, until this common-sense suggestion was confirmed by the surveys of Admiral Moresby and others interested, by whose computation it would appear that the Peruvian supplies are limited to eight or ten years at the present rate of consumption. This prospective limit to supply, together with more limited supplies even now, is causing considerable anxiety among agriculturists. It is known that some of the deposits of guano upon the Patagonian coast are already exhausted. These circumstances conspire to give interest to the above inquiry.

Another set of considerations also give the above question an additional degree of interest. The adulteration of guano is getting to be a very common practice. Farmers cannot detect these frauds, and therefore it is very natural that they should wish that there were some good substitute for guano which could not be so easily adulterated, or whose adulterations could be more easily detected.

Moved by considerations such as we have just named, the Royal Agricultural Society of England offered, some time ago, a premium for the discovery of a substance equal in fertilizing value to Peruvian guano, and to be sold at or under £5 ($25) a ton. In competition for this premium there have already been lodged over one hundred and forty claims. Those who have put forward these claims are severally confident of the validity and value thereof. And the public, after making allowance for the self-deception of many of the claimants, may still be very confident that, among the many substances offered as a substitute for guano, there will certainly be one or more which will meet the conditions of the premium, and furnish to the farming community something quite equal to Peruvian guano in fertilizing properties, and at the same time to be had at one half the cost. The majority of the substances entered for competition may prove worthless; but still there can hardly be the smallest doubt but that something will be found among the crowd of offered substitutes which may really prove a good one, or at least an artificial manure of high value for the purposee of the cultivator. So much good, at least, will very surely flow from the stirring of men's attention and ingenuity by the offered premium. It cannot be supposed that *all* the claimants have deceived themselves, that not one out of one hundred and forty has succeeded in discovering a substance or composition which will supply ammonia and phosphates at one half the rates at which these are at present supplied by Peruvian guano.

But, even if not one of the substancee offered in competition should stand the severe scrutiny to which it will be subjected: if not even one of them should pass the scrutiny of the preliminary chemical test; if not even one should be found to contain such amounts of nitrogen or ammonia and phosphates as to render it probable that it could ever be equal to Peruvian guano in manurial effects,—still there will be benefits, of no inconsiderable amount, which will arise from the competition for this premium. If, after subjecting the several substances offered to the preliminary chemical test and to subsequent experiments in the field, the Society should pronounce that not one of the many claimants is entitled to the premium—that not one of the substances offered as substitutes for Peruvian guano has fully come up to all the conditions specified by the Society, still an appeal to the public is open to those who do not think they have obtained justice at the hands of the Society—an appeal which will undoubtedly be made by several of the disappointed competitors. This will bring within the reach of the cultivators of the soil several new substances and new compositions at the very lowest possible rates, and they will be able, in the course of a few seasons, to decide what merit is really due to each. Among them there will be found one or more, which, if not *fully* entitled to the premium of the English Society, will, at least, be of great value as a fertilizer, and, taking into consideration the difference in cost or money value, will make a nearer approach than has yet been made to substance manurially equal to Peruvian guano. If it should, at the same time, be an article not easily adulterated, or the adulteration of which could be easily detected, quite a large benefit will have been confered on the agriculturists of Great Britain and of America.

Curing Clover Hay.

The New England Farmer gives the following brief and simple directions, on the management of clover hay, which accord with what has been occasionally before published on the subject. A little experience may be necessary in conducting this management in the best manner; hence if not fully successful at the first trial, this mode should not be hastily given up.

In curing clover hay, the principal value of which consists in the heads and foliage, we have observed, that when cut early and cured in "grass cock," as it is called, the hay possessed a much more brilliant and beautiful appearance than the same quality of grass, cut at the same time, and cured in the open air, or under a free exposure often for a protracted period to the sun. By cutting this grass when the crop is in full blossom, allowing it to remain in the swath the first day after mowing, till nearly night, and then turning it carefully with a fork so as to expose a fresh and unwilted surface to the night dews, and cocking it in the afternoon of the second day, in small compact cocks, of about eighty pounds unmade hay, to the cock, it will make evenly and thoroughly, and may be pitched and even trodden down in mow without being deprived of its heads or finer leaves. The color will be a most beautiful green, and the flowers will be almost as fresh in color as when cut. After cocking, let the weather be fair or foul, no opening or turning, (unless in case of a protracted storm) of the "grass cocks" should be allowed. It is unnecessary, as the hay will "*cure*" completely through, and the outside, when saturated with water, will soon dry off, and effect no harm whatever to the hay. You will never see mouldy hay, if this method is adopted, in "making" or curing it. In forming grass cocks, the fork is preferable to the rake, which is of service only in gathering up the scatterings, and regulating the size and shape of the cocks.

Plan of Farm Buildings.

In answer to repeated inquiries, we furnish the accompanying plan and elevation of a set of Farm Buildings, so arranged that those who have but limited means, may begin with a portion, and add from time to time as means and circumstances may warrant. These buildings when completed form nearly a hollow square, the main building or barn being in the centre of the further range. This forms a sheltered yard for the domestic animals, in the centre of which is the manure or compost heap, occupying a hollow to prevent the escape of the liquid manure. The cleanings of the stables are daily conveyed to this heap by wheelbarrows.

Fig. 2 is the plan of the whole when completed, as it lies on the level of the ground. Fig. 3, is that portion of the barn situated immediately over that part represented in fig. 2, which is banked up with earth, or dug in the ground, so that the further part of this ground plan shall constitute a cellar for roots, and a space for cutting roots, straw, &c. adjoining it. The curved dotted lines show the wagon-track on this embankment for entering the floor in fig. 3, lying directly over the cutting-room. The root cellar is furnished with two broad, hopper-like troughs, passing through the cellar windows, into which the cart loaded with roots, is "dumped," in filling the cellar.

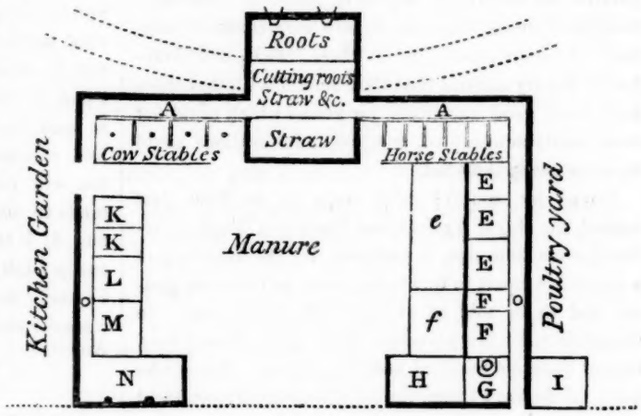


Fig. 2.

By building *wings* for the horse and cow stables, (as the plan exhibits,) the central part or barn need not be so large as ordinary barns, saving much heavy timber in the frame, and assisting in forming the hollow square as a shelter.

On the second floor, Fig. 3, G is the granary, and C the corn crib, both of which are filled from the floor and may be unloaded directly into a wagon under them in the yard below, or drawn off through a shute for the horses in the stable. The bay for straw extends upwards as high as the top of these granaries, over which is a space for unthreshed grain. The horse power of the threshing machine, if a common movable one, is placed on the ground outside, and as soon as the grain is threshed, the straw is conveniently deposited into this bay, perfectly secure from injury by weather. The better way is for every farmer to have his own horse power and thresher, that he may employ his time whenever most convenient. The best two horse endless-chain power, will occupy but little room in "space for cutting roots, &c." from which a band may run up to the thresher on the floor above. This power may be used with perfect facility likewise in cutting straw, slicing roots, winnowing, sawing wood turning grindstone, &c.

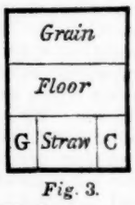


Fig. 3.

The roots lying on one side of this space, and the straw on the other, contribute greatly to the convenience of using them; and as soon as prepared by cutting, the feed is given to the animals on either side by means of the alley A A.

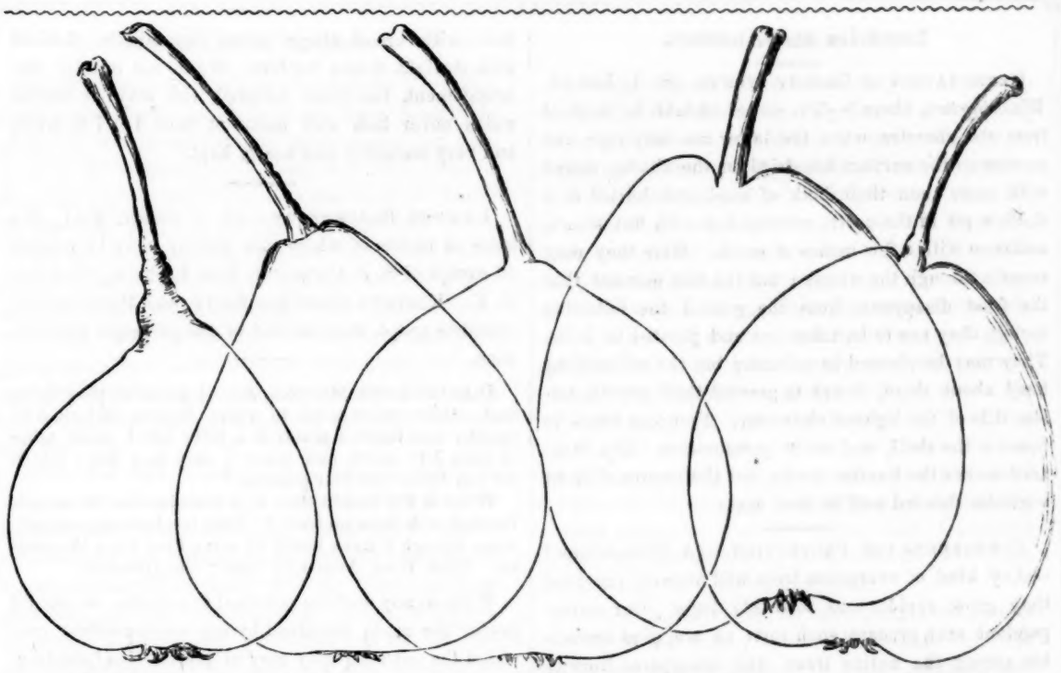
It will be perceived that the barn is occupied with grain and straw, while the spacious lofts over the stable are filled with hay, which is thrown down to the animals below as wanted.

The building and its two wings, now described, may be built first; and the addition hereafter mentioned, may be added afterwards.

These additional buildings may be occupied by sheep sheds at E E E, with an open sheep-yard, *e*; by piggery, F F and pig yard *f*; cooking room, G; house for seasoning stove wood, H; poultry-house, I; calf-houses, K K; workshop L: tool-house, for plows, harrows, rakes, &c. M; wagon-shed, N.

Every part of this range of buildings is entered from the lawn back of the house, by the dry and sheltered passages O O and A A, from which all the animals may be examined, instead of the more common way of wading through the mud or manure of the yard.

The floors of the hay loft, over the stables, should be made tight, to prevent the vapors from the stables tainting the hay; and ventilators, made of square board-tubes, placed over the stables and running up through the roof. Their openings are made to open and shut by sliding boards, according to the weather. The tops of these ventilators are shown in the elevation.



Amire Joannet. *Madeleine.* *Summer Doyenne.* *Osband's Summer.* *Dearborn's Seedling.*

The Early Summer Pears.

Many new pears have been introduced of late years, but very few have proved equal to the best old sorts. There are a few however of great value and excellence, and among them we may name the *Summer Doyenné* (or as the modish writers will have it "*Doyenné d'eté,*") which first became well known about five years ago. The *Tyson* and *Osband's Summer,* (American sorts) have been much longer cultivated, but are not yet widely known. The *Ott*, which has proved a most delicious fruit at Philadelphia, its native locality, has not been proved further north; and should it deteriorate in New-York as much as the Lodge and Pennsylvania, it cannot stand among the first. We hope however it may, like the Seckel, to which it approximates in character, lose none of its flavor when carried to a colder region.

We believe that an occasional review and comparison of the old and new fruits, may be of use to those who wish to perfect their selections, and we therefore give at this time, figures and brief notices of a few of our early varieties, intending a continuation in future.

Amire Joannet. This is a third-rate pear, both in size and quality, but as it ripens at least one week before any other sort, being about one week earlier than the ripening of the wheat crop, it is cultivated by amateurs on account of this extreme earliness of maturity. The tree is an upright grower, and a great bearer, the fruit small, roundish-turbinate, with a red cheek, and a rather sweet, dry flesh. Its ripening should be completed in the house.

Madeleine. This has been long known as the finest very early pear, and still remains so, although for the last few years, the Summer Doyenné has been closely contending for rivalry. The Madeleine ripens with the wheat crop, is a medium sized obconic-obovate fruit, with a pale yellowish-green skin, and a very juicy and melting flesh; and with an agreeable and refreshing flavor. It should be picked a day or two before full maturity, and ripened in the house. This treatment should apply to nearly all early pears, and it is of great importance where any disposition to rot at the core is observable.

Summer Doyenne. This is a beautiful red-cheeked pear, ripening very nearly if not quite as early as the Madeleine, and is fully equal to it in flavor although not possessing its peculiar refreshing quality. It has been much raised on quince stocks, but is found to succeed rather better on the pear.

Osband's Summer. A variety which originated in Wayne county, N. Y., and is noted for its fine flavor and handsome form. It is a good bearer, but never is loaded with heavy crops. The tree is very vigorus, rather upright, and succeeds well on the quince. It ripens a few weeks later than the preceding. Its size is medium, form obovate, very regular, usually with a handsome red cheek, and when house ripened, often with a fine buttery and melting flesh, and a perfumed excellent flavor. There is a spurious sort, much resembling this in form, but inferior in quality, with thicker shoots, and more curled and glossy leaves, ripening at the same time, and which appears to have originated in the same neighborhood.

Dearborn's Seedling. Another American sort, well known throughout the country, for its uniform excellence in all seasons. It is too small to be very popular. The growth of the tree is free and rather upright, and usually bears heavy crops. Every amateur should have it. It appears to grow well on the quince. It ripens nearly the time of the preceeding.

We intend to continue these notices of early fruits.

Inquiries and Answers.

GERMINATION OF CHERRY STONES. (S. I. LOGAN, *Washington, Conn.*)—The stones should be washed from the cherries when the latter are fully ripe, and as soon as the *surface* has dried in the shade, mixed with more than their bulk of sand, and buried in a shallow pit in the earth, covered first with flat stones, and then with a few inches of earth. Here they may remain through the winter; but the first moment that the frost disappears from the ground the following spring, they are to be taken out and planted in drills. They may be planted in autumn; but the soil settling hard about them, is apt to prevent their growth, unless it is of the lightest character. Freezing tends to remove the shell, and assist germination. The Mazzard makes the hardest stocks, but the improved heart varieties succeed well in most cases.

EVERGREENS FOR PROTECTION.—(A SUBSCRIBER.)—Any kind of evergreen trees will answer, provided they grow rapidly and tolerably dense. Our correspondent may procure such sorts as are most accessible among the native trees, and intersperse Norway firs pretty freely from the nurseries, with some silver firs, Scotch firs, and other exotics. The native white pine grows rapidly, and is a beautiful tree—the Norway grows still faster—the hemlock, when grown in open ground, is unexcelled in appearance, and is a fair grower. Summer breezes are more apt to be cut off by too large a proportion of deciduous trees, than by any amount of evergreens likely to be employed. Our correspondent will please remember that in transplanting, the great secret of success is to carry a good solid cake of earth (unfrozen is easiest) on the roots of each tree.

CRAWFORD'S EARLY AND JAQUE'S RAREripe.—(J. A. DONALDSON, Ravenna.) Crawford's Early is usually a few days earlier than Jaque's—sometimes they ripen together. Crawford's Early is superior to this, and to nearly every other sort, by its uniform productiveness in every part of the country.

SELECTION AND MANAGEMENT OF AN ORCHARD.—(A BEGINNER, *Islip, L. I.*)—Our correspondent will find all the needed information on this subject, which is rather too extensive for an article in our paper, in the *American Fruit Culturist.*

WIDTH FOR WALKS.—I believe that you reccommend, somewhere in the Cultivator, having the main path or paths in a garden, 5 or 6 ft. wide. Why would not 3 ft. wide answer all purposes as well as a greater width? O. P.

For an *ornamental* garden, and especially for one laid out in the modern style, main walks less than 5 feet wide would look cramped and meagre. For a parterre (or small group of geometrical beds) many may be much narrower.

A *kitchen* garden, whose appearance is of small account, may have the walks of any convenient width.

There are many gardens with a sort of mixture of the ornamental and geometrical, with the kitchen garden—with broad alleys across the middle, flanked with straight flower borders. We do not admire this arangement, but when adopted, the main or central walks never look well unless at least 6 or 7 ft. wide, and very smoothly and neatly kept.

LAWTON BLACKBERRY.—(J. J. SWAN, *Pa.*) We know of no one of whom this variety may be procured except of S. P. Carpenter, New Rochelle, West.Co., N. Y. Knevett's Giant Raspberry, and Muscat of Alexandria grape, may be had of the principal nurserymen.

DISTANCE FOR MELONS, &c.—I perceive that Buist and others recommend to plant Melons in hills 6 ft. apart; and leave 4 plants in a hill; but I plant mine in hills 3 ft. apart, and leave 1, only in a hill; which do you think the best practice?

What is the reason that wild strawberries, when cultivated, will bear no fruit? This has been my experience, though I have heard of some that have succeeded. ONE WHO ADMIRES THE "CULTIVATOR."

Without any decisive practical experience, we should prefer the mode described by our correspondent, provided the soil is equally easy of preparation, planting, and cultivation. On a uniformly manured surface, it obviously possesses the advantage of a more even distribution of roots through the soil, and of plants over the surface of the ground. Artificially manured hills are sometimes more conveniently made as recommended by Buist.

We cannot answer the inquiry relative to the strawberry, without more knowledge of the circumstances—have any of our correspondents observed similar results? In the few experiments we have witnessed, we never saw any increased sterility

The Apple-Worm.

Is he alive or has the severe winter destroyed him? Unless we get deliverance from this enemy in some way our apple crops will soon be alarmingly small and unsound. This insect seems to be more and more prevalent every year for some seasons past. The *habitat* or hiding place of this animal during the winter, and its habits, do not seem to be sufficiently understood to suggest an effectual mode of warring with it. We have not been fortunate enough to hear of any mode of preventing its depredations having proved reliably or extensively successful. If any of our readers should think they know of any such successful mode of defence against the destructive attacks of this moth, the public would gladly hear from them; and if their method should prove generally successful they would be hailed as *ingenious* and fortunate discoverers, and yet more, as *public benefactors.* The discovery of a mode of prevention would justly entitle any man to the credit of great ingenuity or great good fortune, for many have tried it and failed; and that would certainly be a public benefit, which would save thousands of bushels of apples from destruction, and which would save apple-eaters from wormy apples,—certainly an almost intolerable, a patience-destroying nuisance. *

Horticultural Review.

The Cincinnati Horticultural Review for June, contains, among other excellent things, three beautifully executed lithographic plates, representing the residence of W. B. Smith, Esq., near that city. Two of them are perspective views, and the third a plan of the grounds; and, like all other well executed representations of finely planted grounds, they convey more correct views of the modern improved style of grouping trees in artificial landscapes, than volumes of descriptions. We are satisfied, that next to seeing the places themselves, well executed views of the most correctly planted residences, will do more than any thing else towards correcting the taste of the public in these matters.

After this high commendation, a word or two of criticism will be allowed. We observe here the common defect of many *American* residences, of placing the best part and nearly all the grounds between the house and the public road—as if the most highly ornamented part was intended quite as much for the public to gaze at just as they get in front, as for the comfort and delight of the inmates. In this particular instance, it may have been necessity that placed every thing on one side of the residence. Contrast this, however, with Loudon's description of *Cheshunt Cottage*, as published in the Appendix to Downing's Landscape Gardening, where the family can enjoy many beautiful retired walks, without being gazed at constantly by a street full of passengers,—and we cannot but think that the great leading idea of our countrymen prevailed in its design, namely, that of having but one fair side, and in placing this fair side always towards the public road. We see this in almost every thing, from the New York City Hall, with its marble front, and sandstone rear, to the fifth-rate farm house, with its white face and picket fence yard against the highway, and its Spanish-brown and pig-yard rear. Another point we observe in this plan, is the unobstructed lawn extending directly from the entrance to the house, while the road deviates abruptly. The temptation to run directly across the lawn is too great, and should be removed by planting at this point of view. A third objection is the three long-legged weeping trees, placed in a very conspicuous position. The mania for these distortions of nature should not enter a finished landscape. The only weeping trees admissible, are those of a full, rounded, free and luxuriant growth, whose branches sweep the ground, as in some of our finest elms. With these few exceptions, (and we should not have taken the trouble to mention them, had not these engravings been otherwise of uncommon beauty,) the plan and groupings represented, afford many valuable hints and suggestions to such as are about to plant new residences, and a little criticism now and then, is quite as useful as positive instructions.

Mats for Schools, &c.—Nearly every kind of mat has been tried in the public schools at Columbus, and the rope mats, (made of oakum,) are found the most durable. So says the Ohio Journal of Education.

Fruit Culture.

As the growing of fruit is becoming quite an object, not only for family comfort, but also as a source of profit, too much care and attention cannot be given to young trees, in the present condition of our old lands, which have been under cultivation such a length of time. When our country was new and rich, large orchards were planted, and grew rapidly with little care except an occasional trimming; but a great change has taken place. Long cultivation has deprived our land of its natural richness, and according to some has robbed the soil of some of the most essential ingredients required to produce a good growth of trees. Be that as it may, a few years of experience in attempting to grow trees on an exhausted soil, will convince any one of the utter folly of attempting to raise fruit trees on such soil, without high cultivation and unremiting care and attention. I would as soon think of planting my corn without cultivating it afterwards, as to plant trees and take no more care of them.

No doubt much depends on having the trees properly set in the first place; but let that be done right, the tree will not flourish unless it is highly manured and otherwise cared for. Some shorten down the heads of the trees before planting, alledging it to be necessary so as to make the top correspond with the size of the root and thereby insure the life of the tree; but a little experience has convinced me that this practice is wrong, and calculated to injure the tree and retard its growth. Three years ago last fall, I procured some trees, having the largest tops I had ever seen; at the time of setting, I took but few limbs from them; set them in holes enriched by manure, and have manured them several times since. They have made a rapid growth, and are now in the most flourishing condition of any orchard with which I am acquainted. My trees, or a part of them, are near the wash-house, from which our soap-suds are carried and turned on the roots of the trees. We also wash them several times during the season with soap-suds, and sometimes with weak lye. This keeps the bark smooth, and prevents moss from gathering on them.

No lazy or indolent person ought ever to plant a tree. They require constant care and watchfulness to keep them in a healthy and thriving condition. Young trees have many enemies to contend with. For the last three years, the drouth has been a serious drawback in the growth of young trees. New insects and worms heretofore unknown, at least in this vicinity, have attacked them, and in spite of all our efforts have done them considerable damage. No worm ought ever to be allowed to remain long enough on a tree to make a nest or eat the leaves. Two years since, a worm, about an inch in length, smooth body with yellow rings around it, attacked the young trees. They were to be found in clusters of a dozen or more in the under side of a leaf, and would sometimes in one night eat most of the leaves of a tree; but they made no nests, and when once found, were easily destroyed. The old ancient appletree-worm, is the only one we

have had to contend with this season, and they in small numbers. In dry seasons, trees of one or two years growth, should be occasionally watered in order to keep them in a growing condition. I have practiced this with good success.

Some attention to trees is wanted in cold as well as warm weather. Many who have young orchards, will remember the snow storm of October last. While the leaves were green on the trees, they became loaded with snow and ice, and the consequence was an immense number of trees were nearly destroyed. I perceived what the consequence would be, and went to every tree thus loaded with snow and ice, and shook it off, and thus preserved my trees from destruction, although before I commenced they were so much bent by the weight of snow that the tops came in contact with the ground. Out of about 200 trees, I discovered but one small limb broken.

I would like to know what kind of trees are best suited to our climate in this latitude. Will some of your readers give their views from personal observation? My Rhode Island Greenings so far have made the most vigorous growth, and appear the most hardy, and both last year and this have borne a considerable number of apples. The Baldwins are nearly as large, but do not look so hardy, and have as yet borne no fruit. Of nine or ten other varieties, the growth and appearance are quite different. I give this description of my trees, for the purpose of calling the attention of others to the subject, who have more experience in the business than I have, and also more time and talent for writing. As to the theory of planting and taking care of trees, we have been pretty well instructed; what we now want is the experience of sensible men, whose knowledge has been obtained by actual experiment. Those who possess the knowledge which would be useful in instructing their brother farmers in their laudable efforts to improve the cultivation of fruit, and publish the same in your papers, would receive the thanks of many readers of the same. W. M. C. *West Hebron, Wash. Co., N. Y.*

Remedy for Poisoned Sheep.

One of your correspondents asks what is good for a sheep when poisoned from eating some vegetable poison—(I presume hemlock, wild parsnip root and other kindred poisons.) Doctor Banks uses a mixture of about three parts chamberlye to one part liquid camphor. Drench soon as the sheep gets down. When the camphor is not at hand, he sometimes uses the urine alone. He has cured cases for me that I regarded as hopeless. There can be no harm and not much trouble nor expense in trying it. All that try it as successfully as I have, will hardly ever try anything else.

Were the above remedy universally used, and the Doctor and myself to have one tenth of the sheep saved by it, that otherways would die from ordinary or scientific treatment, I have no doubt but we should soon have means enough to pay for several head of my Friend Jewett's French Merino sheep, which we very much need in this section of country. *Henderson Co., N. C.*

French Names to Fruits.

The Prairie Farmer denounces these, and proposes reform. A great many of them may as well be reformed or removed as not, it is true; but some of them will stick fast, in spite of all the editors and conventions in the country. We shall have to bear them just as we do such barbarously pronounced French words as *apropos, depot, beau, amateur, boudoir, reservoir, unique, souvenir, debut, eclat, corps, bureau,* and fifty others, which most people manage to get through their lips without many wry faces. There seems to be no remedy for *Angouleme, Aremberg, Clairgeau,* &c., but why should we retain the prefix of the word "*beurre*" to some forty or fifty varieties, when in fact this is no designation at all, for hundreds of varieties, including nine-tenths of the whole list of pears, possess more or less of the *buttery* character. We cannot see any advantage the name *Beurré d'Aremberg* (or as the *would-be* modish so often blunderingly have it, "Beurre *de* Aremberg") has over the simple appellation, *Aremberg;* or that Beurré Bosc and Beurré Diel, have over the simple names Bosc and Diel. *Unnecessary* verbiage, especially in French, ought to be repudiated.

Live Braces for Fruit Trees.

Every fruit culturist knows that crotched trees are frequently split apart and nearly ruined when loaded with fruit. I have found by experience that this can easily be prevented by putting in a live brace or stay when the tree is young, to fasten the two prongs or stems of the tree together. It is done in the following manner: Take a small branch of one of the main stems, growing between the two, and cut off the top end slanting, similar to a scion prepared for lap grafting; then make an incision on the opposite stem with a sharp-pointed knife or small chisel; then insert the top end of said branch and tie it down firmly with a woolen string; then cover the wound with grafting wax, and the work is completed; remembering to cut the string as soon as the brace has grown fast, to prevent it from girdling the tree. This is the best operation for crotched trees that I have ever seen tried. ELIHU CROSS. *Hoosick, Rens. Co., N. Y.*

The Shakers at Niskayuna, have practiced a system of connecting the branches of fruit trees, something like that described above, for years, and we should be greatly obliged if some one of them would furnish us with a description of their process, with the benefits derived from it.

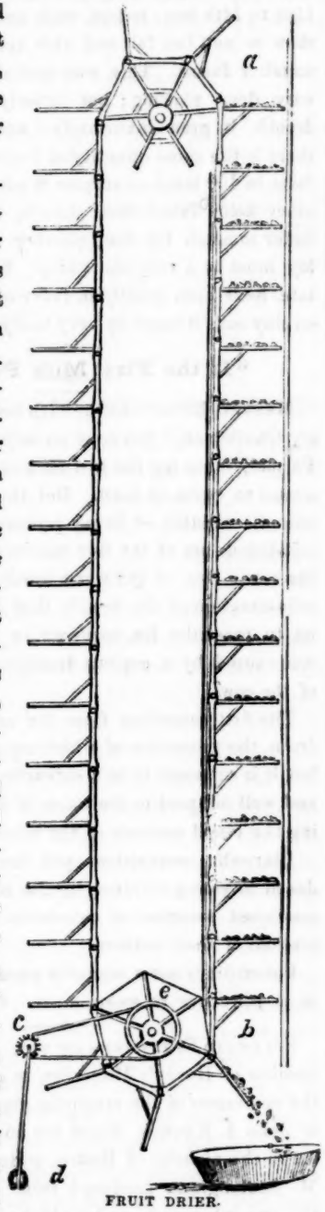
BUDDING ROSE BUSHES.

I take this way to inform all persons who have a taste for raising flowers, that they can have as many varieties of roses as they wish, growing on the same bush by budding it in July or August. The operation is very simple and is performed in the same way as in budding peach and pear trees. I tried the experiment last summer on my rose bushes with success. ELIHU CROSS. *Hoosick, N. Y.*

Drying Fruit.

It has been observed that the amount of peaches consumed in a single week in the city of New-York, exceeds the total consumption of fruit in Great Britain throughout the entire year. The sales of perishable fruits are rapidly increasing throughout the country; but there is one serious drawback to their extensive cultivation,—that is, the necessity of crowding them into market at the critical period of their maturity, so that twenty-four hours' delay shall not witness their destruction by decay and fermentation, and result in their total loss. Hence the immense superiority in this particular, of long-keeping sorts,—which may be deliberately secured and held in market for many months, till the best time shall be selected for their disposal.

But there is another important avenue to market for the perishable fruits that is at present almost unknown in its perfected form. We allude to *preservation by drying*. Every farmer *thinks* he has seen dried apples and peaches, *but not one in a thousand has seen them*—properly so called. That which usually appears under this name, consists in the first place, of a selection of such inferior, poor-flavored fruit, as can be used for nothing else;—this is imperfectly pared, leaving a due proportion of skin and core remaining, and is then variously subjected to partial decay, smoking, drying, &c., forming when completed a singular medley of all colors from brown to nearly black, and with nearly as various an intermixture of flavors. Those who wish to see dried fruit in perfection, must remember that a poor-flavored sort before drying, can never by any ingenious process become finely flavored afterwards. The very finest varieties must therefore be first chosen. The process of drying must then be so rapid that no decay nor even discoloration shall take place until the operation is completed. Our climate is too precarious to think of drying fruit properly in the open air, even for the earliest varieties. Some artificial arrangement for the purpose must therefore be devised.



FRUIT DRIER.

The great leading defect of all the plans we have seen for drying by fire-heat, is *a want of circulation in the heated air*—a deficiency in rapid ventilation. A high temperature is given by means of stoves to a close apartment, the air of which in a few minutes is heavily charged with moisture from the fresh fruit, and a sort of steaming, stewing, half-baking process then commences, producing after a long delay, an article far different from that of a perfectly dried, finely flavored fruit. A free circulation of air, kept dry by a continued fresh supply, would accomplish the work in far less time, and at a much lower temperature; and consequently retain in an incomparably more perfect manner the original characteristics and color of the fruit.

In order to make a beginning in this matter, and to assist in the erection of good, cheap, rapidly-operating, and perfect fruit drying establishments, we present to our readers a figure and description of an apparatus for this purpose, which although never patented, we believe to be far more valuable than many machines not thus thrown open to the public. Its peculiar advantages will be obvious as soon as the description is examined.

It consists of a tall upright shaft, *a b*, represented in the annexed section of the apparatus, through which passes an endless chain, made of a number of strong frames, securely hinged together at their corners. This chain should be strong enough to bear several hundred pounds without breaking. At every joint it is furnished with a braced shelf, each consisting simply of a square frame furnished with coarse twine-netting, like a sieve. This endless chain with its series of sieves runs over an angular wheel above and another below, precisely like those of a common chain-pump, but wide enough to receive the full breadth of the chain. Its motion is quite slow, descending from *a* to *b* on one side, and rising on the other, and is accurately regulated by means of the pendulum *d* connected to the notched wheel *c*, by means of an escapement like that of a common clock, but made very strong. A strong and broad India-rubber band connects the axle of this wheel to the drum *e* on which the chain runs. As the chain is loaded with the drying fruit, and is therefore quite heavy, it must not, and indeed cannot be subjected to the successive vibrations of the clock work—these vibrations being broken and destroyed by the India-rubber band.

The whole apparatus being ready for operation, heated air from a stove and drums is made to pass up through the shaft *a b*, being let in at the sides at *b*, and confined to this shaft by the drum *e* being made

light, and fitting closely without touching in its revolutions. A person with the freshly cut and pared fruit stations himself at *a*, and as each successive shift or sieve slowly descends, spreads a single layer over them. They operate like the weight of a clock in keeping up the motion of the pendulum; and the velocity of their descent is accurately regulated by means of the relative sizes of the wheels placed on the axles of *c* and *e*, and also if necessary, by using different lengths for the pendulum rod.

☞ The great advantage of this contrivance is the following: The dry and freshly heated air first enters the bottom of the shaft at *b* and strikes the fruit when the drying process is nearly finished, and completes it; as this air rises, it receives additional portions of moisture from each successive shelf, until finally it passes off at the top,—the driest portions being needed at the bottom, to complete the process, and those most charged with vapor only coming in contact with the freshest fruit at the top, where only it could be useful.

The velocity must be so regulated, by experiment, (according to the height of the shaft, heat of the air, and time required for drying,) that the drying process shall be just completed by the time the fruit reaches the bottom, where it drops off from the revolving shelves into baskets or boxes placed there for this purpose.

This apparatus may be placed in a tall narrow building erected for the purpose, and built cheaply by vertical boarding on a wooden frame, to the whole of which a handsome architectural exterior may be imparted by giving it the aspect of a square Italian tower or campanile.

An apparatus of this sort will dry fruit with great rapidity, certainly, and independently of the most unfavorable changes in the weather; and it will come out white, clean, and perfectly dried, retaining all the peculiar flavor of the fresh fruit, and prove incomparably superior to the common half-decayed, smoked, imperfect article. When known, such dried fruit must command almost any price in market. Drying establishments, well managed, would give a great impetus to peach planting in this country; and we unhesitatingly predict a large trade in the finest dried peaches in European markets, to which they can be so cheaply and safely conveyed, and where, as fresh peaches cannot be easily obtained, they cannot fail to be very highly appreciated.

Black Warts on Plum Trees.

I have come to the conclusion that this disease in plum trees is contagious; therefore if it is not checked at the commencement, it will soon affect every tree in the orchard, and in a short time destroy them. The best remedy that I have tried is to cut off the branches affected, as soon as the disease makes its appearance. These warts made their appearance on my plum trees about ten years ago; I immediately cut off all the branches affected, and burned them; the trees then affected, are now in a healthy condition. If the warts should make their appearance the next year, the same practice must be persisted in, for without perseverance we can not expect much success in any undertaking. ELIHU CROSS. *Hoosick, N. Y.*

The Wheat Weevil.

NEAR GENEVA, June 30, 1854.

DEAR SIR—I find on inquiry through this county and those adjoining, that the weevil or wheat midge is not near so destructive to the wheat this year as last, and last year not half as bad as the year previous; yet owing to the remarkable hard weather the latter part of March, wheat, over the whole of western N. York, is a very thin crop, and much of it entirely worthless. The recent drouth, say from about the 25th May, has had a bad effect upon the wheat as well as other crops. My forty acre field, that I plowed after harvest so very deep, and sowed with wheat from the 11th to 14th Sep. to last, with once plowing, did not show as well last fall and this spring as some wheat on other farms. This was undoubtedly owing to the very deep plowing; but latterly, during the whole drouth, it grew luxuriantly; and now I don't think there is the same quantity of Soules wheat on any one farm in 100 miles to surpass it nor to equal it. While other fields failed from drouth, it did not appear to suffer so much for deep plowing. Hay, oats and barley, must be a very short crop. Some few showers of late, have been greatly in favor of the corn crop, but on clay soils it came up very badly. JOHN JOHNSTON.

"Is the First Milk Poisonous?"

MESSRS. ED'RS—In the 77th number of the "Country Gentleman," you copy an article from the "Maine Farmer," showing the first milk of the cow to be poisonous to swine at least. But they are not the only animals capable of being injuriously affected by the injudicious use of the first secretions from the udder of the cow. One of the worst cases of colic, simulating inflammation of the bowels, that it has fallen to my lot to prescribe for, occurred in an Irishman, which was caused by a copious draught of the first milking of the cow.

The first secretions from the udder, contain *Colostrum*, the properties of which are not yet fully known; but it is supposed to be a cathartic, provided by nature and well adapted to the wants of the offspring, removing the viscid contents of the intestinal canal.

Diarrœha, convulsions and death, have been produced in young children, by the too copious and long continued secretion of *colostrum* in the mammal secretions of their mothers.

Colostrum is not a secretion peculiar to cows, neither is it poisonous to swine alone. O. C. GIBBS, M. D.

SPLENDID SPECIMENS OF THE MAGNOLIA.—A late number of Hovey's Magazine, in giving an account of the specimens of the magnolia growing on the grounds of John A. Kenrick, which are admitted to be the finest in the vicinity of Boston, states that a tree of the M. Soulangiana produced from 1500 to 2000 flowers the present season, and a plant of the Conspicua produced 3000 flowers. When the large size and the rich and showy appearance of these flowers are considered, our readers may form a faint idea of the splendor of a tree covered with them.

Chemical Elements of Food.

The subjoined Table, showing the relative proportion of the elementary bodies in some of the principal articles of food, may be of use for reference, and may serve to explain some facts, such as the following: We know a family, the husband being English and the wife of Dutch descent, who have long been remarkable for two things: 1. For their unusually healthy and muscular frames and the great amount of work which they perform: and 2. For their eating cabbage every day in the year, except perhaps for a few weeks in summer. The table shows that cabbage contains nearly as much nitrogen as beans: and it is well known that beans and other nitrogenous food favors especially the growth of the muscular system:

DRIED AT 230° FAHRENHEIT.

	Carbon.	Nitrogen.	Oxygen.	Hydrogen.	Ashes.	Water lost in drying.
*Wheat,.....	46.1	2.30	43.40	5.80	2.40	
Beans, (haricot,)		4.30				7.9
†Cabbage (hearted,)		3.70				92;30
†Grass, (hay.)...	45.80	1,50	38.70	4 99	9.01	
*Mangold wurzel	42.80	1.70	43.40	5.80	6 30	
*Potatoes, ...	44.00	1.50	44.70	5 80	4.00	

*Boussingault. †Thaer.

Preservation of Manure during the Summer Months.

This is rather too generally neglected, judging from the number of exposed manure heaps which may be seen along all our roads. The cleanings of pigsties, of stables, &c., are thrown down where it may be most convenient, and there left exposed to the destructive or wasting influences of wind and rain. By such treatment the manure heap will soon lose all its virtues. The great superiority of covered over uncovered manure was recently made manifest by a report of some experiments made with each. As it requires, however, considerable time and expense to provide a place of shelter for the manure of the stable, the pigsty, and the cattle-yard; and as some may be induced by the article referred to, or by other considerations, to take some more care of their manure than hitherto, but who have as yet no shelter provided for it from sun and rain, we would suggest a method which may be practiced by almost any one. Set four, six, or eight posts in the ground in or on the edge of the yard or by the side of the manure heap, so as to have something like a wagon shed with the roof sloping, if possible, to the south. It may be about ten feet wide, if to be covered with 12 feet boards or slabs; or double this width so as to permit a wagon being driven into it or through it, to carry off the manure, if the roof be made to slope both ways. Let the shed or shelter be boarded up on three sides, leaving it open only on the north. Let the manure from all quarters be wheeled to this, laid down in a row or heap running the whole length of the shed, and made as firm as possible by slapping with the shovel, &c. Near by should be a few loads of muck from a ditch, or earth or dirt of some kind, a layer of which should be thrown on each successive layer of manure. By this means the manure will be kept from sun and rain, and at the same time the gases which are apt to escape during the heats of summer, even under shelter, will be absorbed by the mucky or earthy matter which is put on the manure—a little over each days addition or layer. Let those who think all this would not pay, try it.

The Housewife.

CURRANT WINE.

Mr. D. D. T. More, of Watervliet, furnishes us the following recipe for making currant wine:

To one quart of currant juice, add three quarts of water and three pounds of the best white sugar. Let it stand four or five months, until all fermentation is over, after which it may be bottled, and will soon be fit for use. Wine prepared in this way will keep for years. While fermenting, it should be left open—if in a barrel, the bung should be left out.

Mr. More informs us that wine may be made from the black currant by the same recipe, and also that a very palatable drink may be made from the tomato, by using the same proportions of juice, water and sugar.

TO DESTROY BED-BUGS.

Messrs. Editors—We have made use of the following simple, yet efficient means of destroying bedbugs and similar vermin, for several years, and found it to be complete in its extermination.

Remove from the room every thing which is not infested; then take a small quantity of sulphur and set it burning in an old kettle, keeping the room closed tight until the smoke has all disappeared. After this, thoroughly ventilate the room, and the smell of sulphur will all pass away. D. C.

Mint Sauce.—Many of our country friends do not know what a luxury they deprive themselves of when they eat lamb either boiled or baked, without *mint sauce*. Set a few roots of spearmint in one corner of the garden, and they will soon furnish an abundant supply. Strip off the leaves and chop them fine, add an equal amount of sugar, and cover the whole with vinegar. A small tea-cup full of the mixture will be sufficient for a large family. Try this and see if it is not far preferable to greasy gravies.—*Ohio Cult.*

To Boil Rice.—Rice is one of those vegetables which is easily injured by poor cooking, and may be made really unpalatable by a little over-boiling. Rice should be carefully looked over, and thoroughly washed in two or three waters. The kernel will then have a pearly lustre. It should be put into boiling water in which a little salt has been thrown, and allowed to boil fifteen to seventeen minutes. The water should then be drained off—and the kettle set back from the violent heat of the fire—when it has steamed in this way about fifteen minutes, it will be perfectly soft, of snowy whiteness, and each kernel will retain its individuality, and not be lost in one solid mass of paste. A pint of rice may be boiled in three quarts of water. *Am. Agst.*

To Kindle a Fire.—To start a fire in the morning, take a piece or two of rosin, the size of an ounce ball, or chesnut; wrap it loosely in paper, and set the paper on fire. About one cent's worth a week kindles my fire.

Wind Mills.

Some weeks ago, we published a figure and description of a wind mill for farm purposes, and promised as soon as practicable, to furnish another and cheaper contrivance. This we are now enabled to do by inserting two engraved figures with a description, from THOMAS' new work on Farm Implements:

The force of wind may be usefully applied by almost every farmer, as it is a universal agent, possessing in this respect great advantages over water-power, of which very few farms enjoy the privilege.

Wind may be applied to various purposes, such as sawing wood by the aid of a circular saw, turning grindstones, and particularly in pumping water. One of the best contrivances for pumping is represented by *Fig.* 1, where A is the circular wind-mill, with a

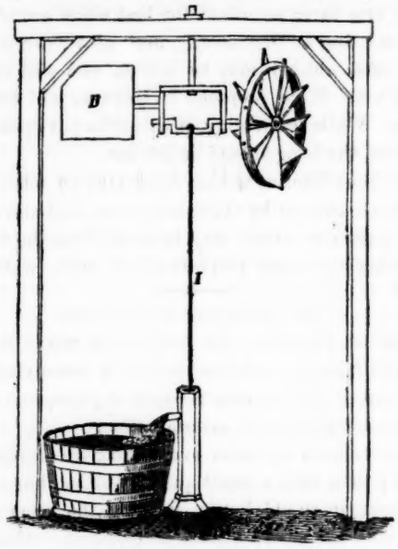


Fig. 1.

number of sails set obliquely to the direction of the wind, and always kept facing it by means of the vane, B. The crank of the wind-mill, during its revolutions, works the pump-rod, I, and raises the water from the well beneath. In whatever direction the wind may

Fig. 2.

blow, the pump will continue working. The pump-rod, to work steadily, must be immediately under the iron rod on which the vane turns. If the diameter of the wind-mill is four feet, it will set the pump in motion even with a light breeze, and with a brisk wind will perform the labor of a man. Such a machine will pump the water needed by a large herd of cattle, and it may be placed on the top of a barn, with a covering, to which may be given the architectural effect of a tower or cupola, as shown in *Fig.* 2.

Lime and Ashes for Muck.

MESSRS. EDITORS—Is it proper to use ashes and lime together, to decompose *muck?* If so, what proportion of ashes to lime, should be used? How many bushels of the mixture, will decompose a cord of muck? Can muck, decomposed as above, be used with impunity in compost with stable manure, without the lime contained in the muck driving off the *ammonia?* If it can, how many cords of the prepared muck, to one of stable manure, can be used, with a view to make the utmost advantage?

Can muck, prepared only with lime, be used with stable manure, without endangering the ammonia? How many bushels of lime will decompose a cord of muck. How many bushels of ashes will do the same? LONG ISLANDER.

Is it proper to use ashes and lime together to decompose muck. The ashes should be in smaller quantity than the lime, but no definite proportions can be given to suit all cases. The refuse lime containing ashes, from kilns where wood is used in burning, may be used in this way to good advantage. As far as actual *decomposition* is concerned, perhaps lime is as good as such a mixture, but we add other ingredients in the ashes and hasten the process.

As to proportions of the mixture to be used, muck varies so much that definite proportions I cannot give. I have seen no farmer use any exact rule in such cases. When *lime* alone is used, the amount is varied, from one to five bushels per cord (128 solid feet) are used; two bushels are generally amply sufficient.

Such decomposed muck should *not* be used in compost heap with stable manure, unless it has lain exposed to the air a long time before mixing it with such manure, and even then some loss of ammonia is likely to occur. The same is true, whether lime or lime and ashes, are used to effect the decomposition.

Muck varies greatly in its composition, properties and effects. The use of lime, (or other alkali,) is to neutralize certain organic acids found in it almost always, and perhaps to effect some other important changes. The same thing can often be effectually done by exposing it to the action of the air, one season; but many good farmers prefer the use of lime, mixing the two thoroughly some time before they wish to use the mixture. Such is used with very good effects in the western part of the state upon various crops. When lime is not used in its decomposition, it may be used in compost with stable manure. B.

Grubs in Apple Trees.

Some writers tell us that the ravages of these worms can be prevented by putting lime or ashes around the trunks of the trees. This may do a little good, if the grubs have not entered the trees: but after the grubs have penetrated the tree, and bored a hole upward four or five inches from the place of entry, to say that they can be driven from their hiding place by putting lime around the foot of the tree, is a perfect humbug. The only way to destroy them is to dig them out with a sharp pointed knife or other suitable instrument, and kill them. ELIHU CROSS. *Hoosick, N. Y.*

Curing Hay.

We find in the *Middlebury Register* of 12th inst, a valuable article on this subject from S. W. JEWETT, Esq., from which we make the following extracts:

In our opinion, there is a great mistake existing in this matter. It is an old adage, "Make hay while the sun shines," and many seem to think that the more sun they can get upon their hay the better. Here is the mistake to which we allude.

By this process of over drying in the sun, a great many tons of hay are lost. The influence of the sun is partly that of disti lation, and has the power to expel not only the watery elements contained in plants, but the real substance of the plant itself, which goes to form fat and muscular fibre of all ruminating animals. It is asserted by distillers of plants, that to procure the most oil, they must not be dried in the sun, as it not only lessens the quantity of oil, but also diminishes the flavor. Now, grass may be exposed to the influence of the sun's rays, until there remains but the woody fibre, until there is no more nourishment in it than there is in a pile of wood.

Thus, from one tenth to four fifths of the nutritive part of hay is lost by the maker in the process of drying, or what might be more properly called a process of distillation. We have reason to believe that in Vermont alone there is lost during one season, in this way, more than five hundred thousand dollars worth of nutriment in hay; which, if it had been wisely retained, might have nourished many hungry flocks and herds, as nature designed it—instead of being resolved again into its constituent elements, and wafted away by the winds.

When the hay-maker is desirous of stacking or mowing his hay a little underdone, he may do so with impunity, by adding layers of dry straw or old hay, occasionally, to absorb the gases which would pass off by over heating or in the field, under the influence of sun and air. Much value, in this way, may be saved, as stock will eat the straw and old hay with avidity, though it may have been second quality.

Another good method of storing your hay, as green as possible, is by providing several places so that but one or two loads may be put together the same day. By this gradual process of storing the hay, it will be richer in quality, if not over ripe.

When the hay is not made enough to save well by storing in large bodies,—it may be cast on to an open scaffold or remain on the load, over night, to sweat. All hay, under done, should be pressed as lightly as possible in mow or stack, but when over cured or too ripe, the more solid it is pressed at unloading the better.

To make a stack of hay properly, it should be several days in going up, that you may be able to retain its good virtues and give the stack time to settle by degrees.

Grass should be wilted, then, without dew or wet, and put up into cocks, not by rolling, but by placing one forkfull top of the other. When the grass gums the scythe in cutting, it requires little or no drying before it goes to the barn, if stored with proper care. Hay may heat in the mow, to a certain extent, and not be rejected by stock, and is not apt to must or mold in small bodies, if the water is thoroughly dried off. When hay is liable to over heat, it should be turned up to air, or a square pit cut out of the centre to check it.

A chimney is sometimes formed by setting bundles of straw on end one top of the other, commencing near the bottom of the stack, or mow ending near the top. When over dried, as before stated, it never becomes solid in the mow. That fed from the solid mow, is of more value, and will go much further, pound for pound, than that fed out of the loose hay in bulk.

Every stack or mow, divided by the hay knife, will keep more stock, fed in this fresh state, than from the larger surface, which is constantly exposed to the distillation of the air. For the same reason, when moved in the winter, it does not spend as well.

Protecting the Peach.

The following communications, which appeared in a late number of the New England Farmer, confirm the opinion which we have repeatedly expressed, that in nearly every county in the Northern States, crops of peaches may be successfully raised, by selecting a proper site, and giving proper treatment. Shortening-in the trees, so as to keep the heads in a small, compact, but not crowded head, would greatly facilitate winter protection, besides improving the crop. We have already mentioned the advantages of evergreen boughs, and these would doubtless prove very efficient, and would be easily applied in such districts as are largely supplied with pine, hemlock, or cedar forest trees.

MESSRS. EDITORS—In answer to an inquiry in your last week's paper, whether trial had been made by any one in protecting the peach, I am happy to say I have tried it with complete success. I have peach trees in their fifth year, which have never suffered in the least from the coldest weather. This place is situated one degree north of Portland in the White Mountain region, about 700 feet above tide water. The prevalent idea that extreme cold alone will kill the peach, I believe must be abandoned; or rather, the idea that when the thermometer is 12° degrees below zero it is fatal; I have contended for several years, that it is not so much the extreme cold as the strong winds, pelting sleet and snow, and sudden changes of temperature that affect the peach. We had the thermometer once last winter at 34°, and at several times from 12° down to that extreme degree of cold, and yet our peach trees that were protected by matting or fir boughs were not injured at all.

My practice is this. Late in the fall I draw the limbs of the tree together and put round some matting, a single fold will answer, drive a stake down by the side of the tree and fasten the tree to it. One man can protect from one to two hundred trees in a day; care should be taken not to unwrap too early in spring, so as to expose the fruit buds to the late frosts.

I also protected a locust tree in the same way, simply by lashing a few fir boughs to the northwest side of the tree. It now looks as bright as though it were growing in the latitude of Philadelphia.

I can see no reason why peaches cannot be raised in any part of Maine simply by protecting them in this way. It may not be known to all of your readers that although we live so far to the North, the ground is rarely frozen to any extent, in winter. The early snows prevent this, so that it is only the tops of such trees that need special protection. It is useless to attempt the cultivation of the peach in this State without some kind of protection; they may survive one, two, or even three winters should they be mild, but the fourth may kill them all down.

I can see no reason why the tender varieties of dwarf pears and plums may not be protected in the same way, and thus largely increase our luxuries. A little pains must be taken even with the apple tree to make it flourish. I have known persons object to cultivate the Isabella grape, simply because they were told that the vine must be protected through the winter; such a person ought not to possess many comforts. M. T. TAVE. *Bethel, Me., May 27, 1854*

To Black a Brick Hearth.—Mix some black lead with soft soap and a little water, and boil it—then lay it on with a brush. Or mix the lead with water only.

Answers to Inquiries.

COUCH GRASS.—"Be so kind as to tell me, if possible, the best way to destroy utterly, this labor-consuming, patience-worrying weed." *A Subscriber.* The leading principle to be observed in destroying all weeds which increase by the roots, is that *plants die by smothering.* Keep them under the soil, not allowing them to breathe through their lungs the leaves, and they will soon perish. If then, there is no further increase by seeds, the work is accomplished. If there are no stumps, trees, large stones, or other obstructions, the whole upper surface of the soil, including all its matted roots, may be turned deeply under by means of the largest double Michigan plow, drawn by three yoke of oxen or their equivalent in horses. The first mould-board should run deep enough to throw the surface into the bottom of the previous furrow, so that the second mould-board may bury it deeply there.

STEEL SOD AND SUBSOIL PLOW.—*C. C. T., Huntley Grove, Ill.* The Michigan sod and subsoil plow, with steel shares, is manufactured, we are informed, by E. THRASHER & Co., Dayton, O. We do not know the price.

CLOVER HEADERS AND HULLERS.—I wish to know where I can obtain a clover header—one that takes nothing but the heads, and the price thereof; and also a clover huller and separator, that can be run by a strap horse power, and the price of it. W. WESTBROOK. *Pike county, Pa.*

Wagener's Clover Header, said to be the best machine of the kind, can be procured at the Agricultural Warehouse of RICH'D H. PEASE in this city—price $100. MESSRS. WHEELER, MELICK & Co. of this city, manufacture their well-known clover huller—price $32; and we are told there is a Clover huller and separator combined, made by A. Letterette, Waterloo, N. Y.—price $90.

CURRANT AND ELDERBERRY WINE.—Will you, or some of your readers, give me reliable recipes for making and keeping currant and elderberry wine? It is possible that recipes have been published in former volumes, but as to many of your readers those are inaccessible, it may be well to insert them again. H. L. S.

Our correspondent will find a good recipe for making currant wine in the 1st vol. of the Co. Gent. p. 325, or in the Cult. for 1853, p. 223. Perpaps some of our readers can furnish a recipe for elderberry wine.

COTSWOLD SHEEP.—I saw an inquiry in the *Country Gentleman*, for Cotswold bucks. I have a flock of about one hundred of that kind of sheep, and have some buck lambs born in May. I have also one two-year-old buck and two yearlings that I could spare. ALFRED HALE. *Lyons, N. Y.*

In the last Cultivator, I perceive a notice of a subscriber, wishing to know where he can procure a pure-bred Cotswold buck. I can tell him. I have one, 3 years old this spring. He is not a decendant, direct or indirect, from Col. Ware or Mr. Reybold's flock. I must make a new cross the coming fall, and this is my only reason for parting with him. His equal I do not expect to find. As a stock-getter, he can show some as good decendants as any *sheep in the state.* Suffice it to say I will give, for his equal, $100.

I have a number buck lambs of his get; and will sell some ewes this fall, if any of your friends wish to purchase of the pure Cotswold breed. I have not mixed with Lincoln, Leicester, or any other, but a few ewes of Oxfordshire, and I have bred them for 18 years. Address JUSTUS C. HAVILAND, *Chesnut Ridge, Dutchess Co., N. Y.*

SEEDING TO CLOVER AND TIMOTHY.—(J. F. F. H., Green Bay, Wis.) In order to seed land to clover and timothy, that is now covered with coarse grass and willow bushes,—the first thing is to drain the land if it needs draining—then remove the bushes, and if possible plow the surface, or render it mellow by some process of tillage. Timothy and clover sown very early in spring upon this surface and brushed in, will probably form a fine growth in a few months. The growth of timothy is well adapted to drained peat lands, and clover often succeeds well, but is not so certain of success.

PIAN FOR A GRANARY.—A correspondent at Armington, Ill, wishes a plan of a granary that shall hold 800 to 1000 bushels of wheat, 500 of oats, with a small corn crib for 200 to 400 bushels of ears. Also, with a shed attached for wagons, implements, &c. The cost may be $200 to 400. Will some of our readers, who know of a model erection of this sort, please furnish a plan and description? If placed on rat-proof pillars, the wagon-shed should be built separate. Where rats find access to the building, they may be generally kept out of the bins by lining the corners with strips of tin or zinc a few inches wide, but the best way is to exclude them entirely.

MICHIGAN DOUBLE PLOW.—This plow may be used in all soils, whether heavy or light, that are benefited by *deepening.* There are very few that are not—we have never met with any exceptions—but some may be much more improved than others. A depth of a foot or more with three yoke of oxen with largest plow, is easily attained. Two yoke will run it ten or eleven inches down.

CORN CUTTER, FOR HORSE POWER.—I wish you would give me some information of a corn cutter by horse power, which as been exhibited at the Crystal Palace, through the columns of your paper. Yours, &c. E. DENNISON.

Will some of our correspondents, who may possess the desired information, please answer the above.

HAND-MILLS.—(*J. Munger.*) For grinding *flour* for bread, we do not think any mode can be devised so cheap or perfect, as the best mills now in operation through the country. But where mills are remote, coarse feed for domestic animals, requiring but little skill, and saving much teaming, may undoubtedly be prepared by horse power at home, during rainy days in summer, or stormy days in winter. Will some of our correspondents, who may have used such mills give

us the result of their experience, and what mills they have found to succeed best.

PASTURING WOODLANDS.—(*A Subscriber.*) We do not consider it expedient in any case to pasture woodlands; for if thick, no grass of any value will grow, and if not so, the underbrush should be allowed to come up and supply the deficiency. Land should be either quite cleared, so as to be subjected to tillage, or else allowed to grow densely to trees.

GAME FOWLS.—In answer to an inquiry in the Country Gentleman, where game fowls might be obtained, I will say that I have been breeding game fowls for the last nine years, to the exclusion of all others. I have the most approved breeds now in use, and entirely pure. Price $5 per pair. For further particulars address R.W. K., *Jefferson Valley, N. Y.*

COW'S TEATS.—Can you or any of your subscribers, inform me of a way to cure a stoppage of the milk in cows? I have a Durham cow, valuable for stock which gives milk from one teat only; the others have given milk, but now seem to be stopped up by a loose lump in the teat at its base or upper part; the lump is hard and loose from the skin; seems like a knot, about as large as a chestnut. There was no apparent inflammation previous to the appearance of the lump. Any information thankfully received. N. N. *Havana, Schuyler Co., N. Y.*

S. C., Cline's Mills, Va.—We have handed your ort to R. H. PEASE, Albany Ag. Warehouse, who will write you on the subject.

H. R. Jr., Ghent, Ky.—There is a hay press manufactured in this city, by DEERING & DEDERICK, which we believe works well. Emery is not making his press at present.

S. M. D.—This correspondent inquires the prices of butter, cheese and milk, in New-Orleans, St. Louis, Memphis, Louisville, Cincinnati, &c.; but we have no means of answering his question.

List of State Fairs for 1854.

Ohio,	Newark,	Sept.	19—22
Michigan,	Detroit	Sept.	26—29
Illinois,	Springfield,	Sept.	12—15
Indiana,	Madison,	Oct.	4— 6
Iowa,	Fairfield,	Oct.	25
Wisconsin,	Watertown,	Oct.	4— 7
Pennsylvania,		Sept.	27—29
New-York,	New-York City,	Oct.	3— 6
Vermont,	Brattleboro',	Sept.	12—14
New-Hampshire,		Oct.	3— 6
Georgia, So.(Central,)	Augusta,	Oct.	23—28
Connecticut,	New-Haven,	Oct.	10—13
Maryland,	Baltimore,	Oct.	3— 6
Missouri,	Boonville,	Oct.	2— 6
Lower Canada,	Quebec,	Sept.	12—15
Upper Canada,	London,	Sept.	26—29

A writer in the Vergennes Independent estimates the cost of the highway fences in Vermont at $4,640,000, and the annual expense of supporting them at $855,200. Therefore he argues that these fences should be dispensed with.

Agricultural Societies.

ROCKINGHAM FAIR.—We are indebted to H. F. FRENCH, Exeter, N. H., for the "Transactions of the Rockingham Fair for 1853." This association was organized in Oct. 1852—HENRY F. FRENCH, Prest. and J. T. GILMAN, Sec'y—and held its Fair in Sept. 1853, which proved, as we should have anticipated it would under the magnetic influence of its worthy president, eminently successful, and the association closed its first year's doings with a balance of over $1,500 in its treasury. A large portion of its funds was derived from 380 persons who became life members by the payment of $5 each. The Transactions open with an introduction, setting forth very clearly the objects and benefits to be derived from agricultural and mechanical associations. This is followed by an account of its Fair, Reports of Committees, &c., and the Address, which was delivered by SIMON BROWN, Esq., editor of the New-England Farmer, and which is marked by the sterling good sense which has characterised that journal since it has been under his charge.

GREAT FAIR AT PITTSBURGH.—The Allegheny Co. (Pa.) Ag. Society are to hold an exhibition, for Western Pennsylvania and Ohio, at Pittsburgh, commencing on the 3d of Oct. next. From the liberal premiums, for a list of which we are indebted to P. A. WAY, Esq, vice-president of the Society, and the ample preparations making, a magnificent show may safely be anticipated. One of the most attractive features to the multitude, will undoubtedly be the trial of skill on the part of the "Lady Equestrians," for the rich prizes made up by the citizens of Pittsburgh, consisting of a $200 horse—one of $30—three of $20—one of $15—six of $10, and five of $5.

RENSSELAER CO. AG. SOCIETY.—This society having succeeded in paying the debt incurred by the purchase of its fine show grounds at Lansingburgh, are determined to get up an exhibition this year which shall surpass any former one of the society. With this view, and to encourage a livelier competition, the amount offered in premiums has been increased six hundred dollars, making the whole amount over two thousand. The fair is to be held on the 19th, 20th and 21st days of September, and will, we doubt not, be one of the best ever held in the State.

ONONDAGA AG. SOCIETY.—The next fair of this society is to be held at Syracuse on the 20th, 21st and 22d of Sept. This society embraces within its precincts, some of the best farms as well as best farmers in the State, and its exhibitions are alway a credit to them. J. C. Woodruff, Syracuse, Prest; H. D. Didama, Salina, and D. Cossitt, Onondaga, Secretaries.

☞ The Orleans Co. Ag. Society, holds its next fair at Albion, Sept. 27 and 28.

THE FARMERS' INDEPENDENT AG. SOCIETY will hold a fair at Morris, Otsego Co., the 20th and 21st of Sept., at which time the usual premiums offered by such associations will be awarded. F. M. ROTCH, Esq., Butternuts, is President, and A. C. MOORE, Sec.

Notes for the Month.

ANALYSES OF SOILS.—We cannot too highly commend to the attention of our readers, the communication of our correspondent, Mr. S. W. JOHNSON, published in this no. of our paper. It discusses the question of the immediate practical value of soil-analyses, with candor and ability. It is from the pen of a man of science, who has devoted himself for years almost exclusively to the study of agricultural chemistry, and who thoroughly understands the subject upon which he treats. His conclusions are clear and emphatic, and cannot fail to commend themselves to the good sense of the intelligent and reflecting reader.

Great efforts have been made in this country, by ignorant and designing men, to lead the public mind astray upon this subject. The idea that chemistry had opened the arcana of nature, and revealed to us all the processes of vegetation, and that all that was now necessary was to furnish a chemist with a few pounds of earth, to enable him to prescribe with unerring certainty the medicaments necessary to ensure the production of a certain amount of any desired crop, was, indeed, a beautiful one; but in practice, the test to which all theories must be subjected, it proved an utter failure; and few, if even one really intelligent chemist, can now be found, who believes in this proposition. It is, in fact, only advocated by pretenders, who believe that an "honest penny" can be made in the shape of fees for $5 analyses, and the prescriptions deemed necessary to render them effectual.

A NEW MOWING MACHINE.—Mr. FISK RUSSELL of Boston, a practical mechanic of large experience, has invented a mowing machine which differs in several particulars, both in principle and construction, from those now in successful operation, and decided advantages are claimed for it. The driving wheel is the same as in Ketchum's; but the vibratory motion is obtained from a wheel consisting of a series of cams, by the undulating rim of which a lever is made to move the knives. The knives are each separate, and play upon a steel pivot, acting as they vibrate, like a pair of shears. The frame of the machine is supported by a second wheel of the same size and opposite to the driving wheel, which renders the movement of the machine more steady, and obviates in a great measure, the side draught.

The machine was tried last week on the farm of B B. KIRTLAND of Greenbush, and did its work admirably. There was no clogging, and apparently less power was required to operate it than other machines. It is simple in its construction, and works with very little friction. Mr. RUSSELL intends to devote the remainder of the hay season to experimenting with and perfecting his machine, and it will not be offered for sale till another year. Any judgment as to the superiority of the machine would be premature until further trial has been made, but it certainly promises to be a valuable labor-saving implement.

FARM MACHINERY.—The Journal of the N. Y. State Ag. Society states that ROSWELL L. COLT, of Patterson, employs on his farm a steam-engine of 13 horse power, which performs the operations of threshing, cutting stalks, straw, and hay—steaming food, sawing fire-wood, boards, timber, &c. The steaming apparatus for preparing food is very complete. The outbuildings are of the most complete kind—the arrangements for horses, cows, pigs, poultry, &c., are excellent—the stables are so constructed as to save all the manure both liquid and solid.

IMPORTED STOCK FOR OHIO.—We learn that N. B. HOGG, Esq. Newark, O., has recently added to his stock, a South Down ram, and some Essex and Suffolk swine, from the imported stock of Col. L. G. MORRIS, Fordham, and a pair of short-horned cattle from the herd ot Col. SHERWOOD of Auburn.

☞Mr. P. MELENDY of Mount Healthy, O., recently passed through this city, with twenty-nine head of Suffolk swine, some of them imported, and a pair of Devons, all purchased of B. V. FRENCH, Esq. of Braintree, Mass. Mr. M. is a thorough farmer, and is doing much by his liberal introduction of improved stock, to promote the agricultural interests of southern Ohio.

MORE CATTLE FOR OHIO.—Seven short-horned bulls from seven to 22 months old, and ten cows and heifers from one to four years old, and seven Leicester sheep, were shipped aboard the John Bull, from Liverpool for New-York, on the 29th of May, for the United Society of Shakers of Warren county, O. They are spoken of in the English papers as a very fine lot, and cost from $200 to $1,000 per head.

TILE-DRAINING.—S. Williams states in the Farmer's Mirror, that his son has a market garden on the continuous flat lands east of Buffalo; and that his pipe and tile-drains have put him a month ahead of his neighbors this spring, paying more than the outlay in one season.

SHOW OF HORSES AT PROVIDENCE.—The Exhibition of Horses which took place at Providence, R. I. June 21 and 22, was very successful, both reflecting credit upon those engaged in its management, and drawing together a fine display of animals. Indeed in every thing but stallions, the show was pronounced equal if not superior to that at Springfield last year, while the number of entries (345) was nearly as great. The exercises were those usual on such occasions—opening with a display of all the horses on the ground, occupying and moving slowly around the entire track, and followed by an exhibition of the draught horses, mares, fillies, matched, trotting and hackney horses &c. by themselves. A trial of speed, in which horses not under three minutes, are said to have been "nowhere" closed the scene, and the throng of visitors retired well satisfied with the arrangements of the managers and the appearance and accomplishments of the brute portion of the exhibition. The weather was very favorable, the course crowded by citizens and strangers, and the best order every where prevalent.

SALE OF FAMOUS HORSES.—Four celebrated racers were sold at auction in New-York last week, viz: *Mac* was struck off at $4,100, to Mr. Mann, of Baltimore; *Tacony* was sold for $3,700, to Mr. J. G. Bevens, of New-York; *Frank Forrester* was sold to Mr. Mann also, who paid $2,350. *Barnum* was withdrawn from the auction, he having been sold at private sale during the morning, for the sum of $2,850.

☞ In the Country Gentleman of June 15th, we published a paragraph, the proof of which escaped reading, and which was so marred by typographical errors, that it failed to contain the facts intended. It should have read as follows:

We understand that Mr. C. D. BENT, near Hannibalville, Oswego Co., has purchased of Col. J. M. SHERWOOD, Auburn, a boar pig, got by his old imported Suffolk boar, and from a sow which he exhibited at the Ag. Society's Show in Feb. last. Mr. BENT has also lately bought a sow pig from JOHN S. CLARKE, Esq., Throopsville, from the sow whose portrait we gave in a late no.

A REMARKABLE HEN.—Last fall I purchased a pair of Shanghai fowls which were hatched late in the spring of 1853. They were allowed to run with the other hens, and were fed but once a day with corn. Pullet commenced laying the 2d day of April, and finished laying the first litter May 17, having layed 46 eggs in as many days. She commenced her second litter May 28—has layed 21 eggs, and continues to lay daily. It will be seen that she has layed 67 eggs between the 2d of April and 17th of June, 78 days. W. H. S. S. *Utica, N. Y.*

THE ONION WORM.—Onions are now being destroyed in almost every part of the country, by a small white grub, which eats the root. Applications of sulphur, lime, ashes, &c. have no effect upon this pest of the garden. I have saved a large portion of my onions, by pulling up the plants as soon as they begin to wilt, and destroying the grub which is found imbedded in the root or lower portion of the stalk. S. *Castleton, Vt.*

A QUESTION FOR AGRICULTURAL CHEMISTS.—I have been lately informed by an intelligent gentleman that he has tried for several years, with very great success, soapstone dust on different growing crops, applied in the manner of applying plaster or ashes. He considers the material as valuable as ashes for agricultural purposes. He procures his dust from a mill, worked by himself for sawing soapstone for market. L. EDGERTON. *Georgia Vt.*

A MAMMOTH FLEECE.—Mr. Hiram Cole, of Shaftsbury, in this county, requests us to say to those engaged in the rearing of sheep, that he sheared from a buck on the 12th day of June last, 28 and 1-16th pounds of wool—This sheep is one year old last March. He also has two ewes, from one of which he sheared 10 pounds and 12 ounces, and from the other 11 and one half pounds. We would futher say that one of these ewes raised five lambs from March, 1853, to May, 1854; and the other has raised three within the same period of time. Mr. C. purchased these sheep of S. W. Jewett, Esq. of this State. They are purely French.—*Vt. State Banner.*

The National Cattle Show.

At the National Cattle Show to be held at Springfield, Ohio, on the 25th, 26th and 27th of Sept. next, the following very liberal premiums are to be paid:

SWEEPSTAKE PREMIUMS.

Best Bull, and 5 Cows or heifers of one year or upwards, from any one State,	$500

DURHAM BULLS.

Best 3 year old and upwards,	$300
Second best 3 year old and upwards,	200
Third best 3 year old and upwards,	100
Best 2 year old and under 3 years,	200
Second best 2 year old and under 3 years,	150
Third best 2 years old and under 3 years,	75
Best 1 year old and under 2 years,	150
Second best one year old and under 2 years,	100
Third best 1 year old and under 2 years,	50
Best Durham bull calf,	50

DURHAM COWS.

Best 3 year old and upwards,	200
2d do 3 do do	150
3d do 3 do do	100
Best 2 do and under 3 years,	150
2d do 2 do do 3 do	100
3d do 3 co do 3 do	50
Best 1 do do 3 do	100
2d do 1 do do 2 do	75
3d do 1 do do 2 do	50
Best Heifer Calf,	50

AYRSHIRE BULLS.

Best 3 year old and upwards,	100
2d do 3 do do	75
Best 2 do and under 3,	80
2d do 2 do do 3,	60
Best 1 do do 2,	75
2d do 1 do do 2,	50

AYRSHIRE COWS.

Best 3 year old and upwards,	100
2d do 3 do do	75
Best 2 do and under 3,	75
2d do 2 do do 3	50
Best 1 do do 2,	60
2d do 1 do do 2,	50

For Devons and Herefords, the same prizes are offered as for Ayrshires.

The recent extensive importations into Ohio and Kentucky, of the best Short-Horns to be procured abroad, most of which will probably be present at this exhibition, will undoubtedly render it, in regard to this breed at least, the most interesting one ever held in this country.

South Down Sheep.

Mr. T. B. BUFFUM of Newport, R. I., in a late no. of the *New England Farmer*, thus speaks of this breed of sheep:—"I keep South Down Sheep, and like them much; they are quiet, thrifty and handsome. I sold to one of my neighbors 26 last fall, and a short time since I called to see them, and they had 48 as fine lambs as need be; one sheep had three, and all doing well. I sold the wether lambs from them last year at $4 per head, to the butcher—my neighbor will probably get more than that for them this year (and there is no doubt at all but he can if he chooses.) We will say that he gets $200 for lambs, and allow say $40—a low figure—for wool, gives $240, a handsome return from only 26 sheep. The sheep were nearly all half blood, except three, perhaps, that were nearly full bred.—I have now a flock of full blood consisting of 30, that have now living and about two months old, 48 lambs, (if I count right) the same number as my neighbor gets from his 26 mixed breed. The mixed breed seem a

hardy, and about as productive, as the full bloods; perhaps they are more profitable for practical purposes, as they generally shear considerably heavier fleeces. I get more for my lambs when I sell them, on account of the breed. I sold all the bucks I had last year, at prices varying from 7 or 8 to 25 dollars, as for quality and size, and bought one of L. G. Morris, for $50. I have this year a few nice lambs sired by an imported buck now owned by J. Thorne, of Duchess Co., that sold in England for $650: they are good lambs, but a stranger could not, I think, select them from among the others.

Spanish Merinoes.

MESSRS. EDITORS—Can your eastern states beat the west in wool-growing? Without intruding, permit me to report the result of my annual sheep shearing. From forty ewes and bucks, I clipped from 4¾ lbs. to 24 lbs. of wool per fleece. I annex the weight of fleeces from 16 Spanish Merino ewes, the wool washed on the sheeps' backs, except nos. 15 and 16, which were unwashed:

No. 1, 10 lbs.—2, 8 lbs.—3, 7½ lbs.—4, 6 lbs.—5, 7 lbs.—6, 6 lbs.—7, 8 and 9, 7 lbs. each—10, 6¼ lbs.—11, 6¼ lbs.—12, 6 lbs.—13, 8 lbs.—14, 11 lbs.—15, 23 lbs.—16, 24 lbs. J. S. GOE. *Tippecanoe, Fayette Co., Pa., July* 6, 1854.

THE PIE-PLANT.—A correspondent of the *Indiana Farmer* expresses the opinion, based upon experiment, that the use of ashes as manure for the pie-plant, produces a more delicious plant than any other mode of culture; not being as sour, but containing just enough acidity to make them pleasant. The reason given for this is, that the acid peculiar to the rhubarb is neutralized in part by the alkali of the ashes.

Buckwheat.

JUST RECEIVED, a very nice lot of Seed Buckwheat, at the Albany Agricultural Warehouse and Seed Store, No. 369 and 371 Broadway. RICH'D H. PEASE.
June 27—w4tm1t

Ohio Farms for Sale.

THE subscriber has three Farms for sale—one of 200 acres, for $13.500—one of 140 acres, for $7,000, and one of 137 acres, for $6.700.

I have also for sale, Pure-bred Cattle, Sheep and Swine, and from additions recently made to my stock, hope to supply all orders in full hereafter. N. B. HOGG.
July 1—w4tm1t Newark, O., June 26, 1854.

Suffolk Pigs,

OF pure blood, for sale by B. V. FRENCH,
Feb. 1—m1y Braintree, Mass.

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THIS celebrated fertilizer, where it has been fairly tested the last year, has been found equal, and in many cases superior to the best Peruvian guano, in its immediate effect, and much more permanently beneficial to the land. It is adapted to any soil in which there is a deficiency of *phosphate*, which is often the case. All crops are benefited by its application. It is composed of ground bones, decomposed by sulphuric acid, o which is added a due proportion of Peruvian guano, sulphate of ammonia, &c.

For sale, with *full* directions for use, in bags of 150 pounds each. No charge for package. All bags will be branded "C. B. DeBurg, No. 1 Super-Phosphate of Lime."

GEO. DAVENPORT, Ag't for manufacturer,
5 Commercial, cor. of Chatham st., Boston.
Feb. 16, 1854—w&mtf

Thomas' New Farm Book.

FARM IMPLEMENTS, and the principles of their construction and use, with 200 illustrations. By J. J. THOMAS.

The following are only a few out of many of the commendatory notices which this work has already received from the press:—

We wish to see this work placed in the hands of every farmer and farmer's son, as an indispensable book; and school commissioners should see that it has a place on the shelves of every rural district school library. It is admirably adapted for popular use as a text book. The illustrations are ample and excellent; and every statement is made in such a straightforward manner that even a child could not mistake the meaning. Mr. Thomas has done the agricultural community a great service in the preparation of this book.—[Horticulturist.

Those who are acquainted with Mr. Thomas' previous works, need not be told that it is written in a clear, concise, practical style, and though eminently scientific, the language is so free from all unnecessary technicalities, and so pleasingly familiar, and at the same time so well illustrated and enliveded by appropriate incidents, anecdotes, experiments, &c., as to excite and repay the continued attention of the reader. We can sincerely recommend it as the best work on the subject on which it treats, extant.—[Moore's Rural New-Yorker.

"This is an invaluable work for the practical agriculturist, affording as it does the theory of mechanical forces as applied in machinery used in farm labor; it will enable farmers to construct many indispensable articles, and to understand the principles and construction of all agricultural machines."—[Boston Herald.

"We know Mr. Thomas to be one of the most talented, well-educated, intelligent and enterprising agriculturists of the Empire State, and is withal a graceful and attractive writer; thoroughly practical, and possessing an unusual share of good sense and a sound judgment. We consider the work before us one of the most valuable works for the farmer issued in a long time.—[Chicago Democrat.

"We have never seen so much philosophy brought to bear in a practical manner on the ordinary concerns of life."—[Presbyterian Banner.

"This book should be in every house having a garden belonging to it; it is as necessary to the farmer as his plow."—[Syracuse Journal.

"It should not only grace every agricultural library, but should be in every farmer's hands. There is no tiller of the earth but may derive benefit and pleasure from this volume."—[Mirror.

"Just the book for farmers who wish to perform their labor intelligently and efficiently."—[Zion's Herald.

"This is an interesting and invaluable work for the farmer, and should be in the hands of every farmer in the country."—[Ohio Farmer.

"An admirable hand-book for the intelligent husbandman."—[Protestant Churchman.

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Albany, April 20, 1854—w&m6m

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"*Emery's Patent Changeable Railroad Horse Powers.*"
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Mowing and Reaping Machines.
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May 1—m5t—w2tinM,Ju.J,A,&4tinS

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July 1—w&m3m

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